

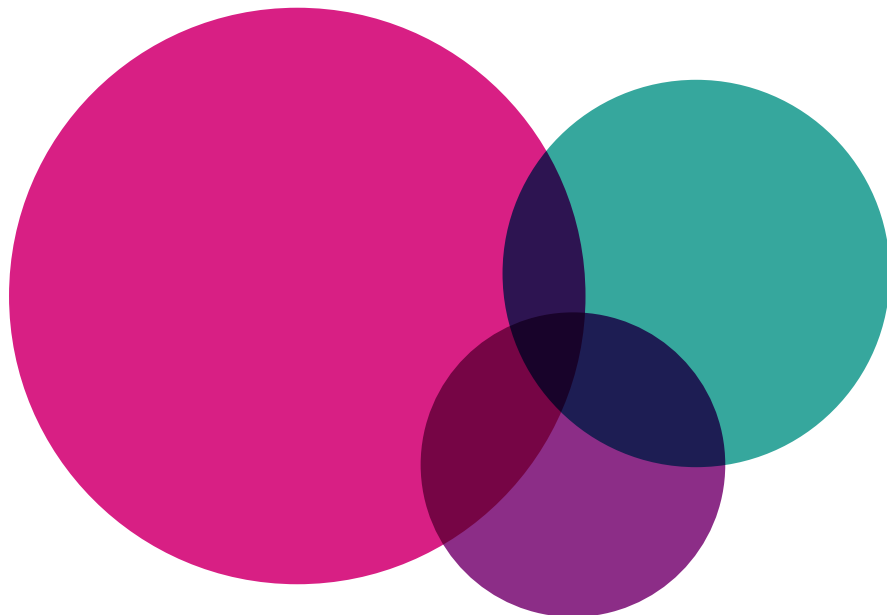
THE  
TRUTH  
ABOUT  
TB



# TB Educational Resource Pack

For Teachers of  
KS3 Curriculum  
(Ages 11–14)





Dear Headteacher,

Globally, 8.7 million people fall ill with tuberculosis (TB) each year, leading to 1.4 million deaths—70,000 of those that die are children. These deaths are entirely unnecessary; TB is curable.

In the UK, TB is a growing concern. Around 9,000 people are affected by TB each year, and the disease remains firmly rooted in inequality—74% of cases are found in non-white ethnic groups and one in 10 people affected face issues such as homelessness, substance abuse, a history of prison or HIV.

TB is caused by airborne bacteria, however close prolonged contact with someone with infectious TB is required to be at risk. Children are most likely to be infected by their parents and other close relatives.

This is why educating whole families and communities about TB is important. We have prepared this TB educational resource pack in conjunction with Brent Council to support teaching about TB in schools that teach the Key Stage 3 Curriculum (age 11–14).

In this resource pack you will find:

- Assembly ideas.
- Project plans.
- Lesson plans based on TB and every subject in the current school curriculum.
- Fact Sheets for teachers and students on TB.
- A 'Get Involved' factsheet with fundraising ideas.

With a specific focus on TB, this pack is designed to support the current Key Stage 3 Curriculum. It will help students gain an understanding of the social, medical and historical effect TB has had, but above all it will ensure that each student, teacher, relative and friend knows that TB is curable and what action they should take.

You can download any of these materials free of charge directly from *The Truth about TB* website:  
[www.thetruthabouttb.org/resources](http://www.thetruthabouttb.org/resources)

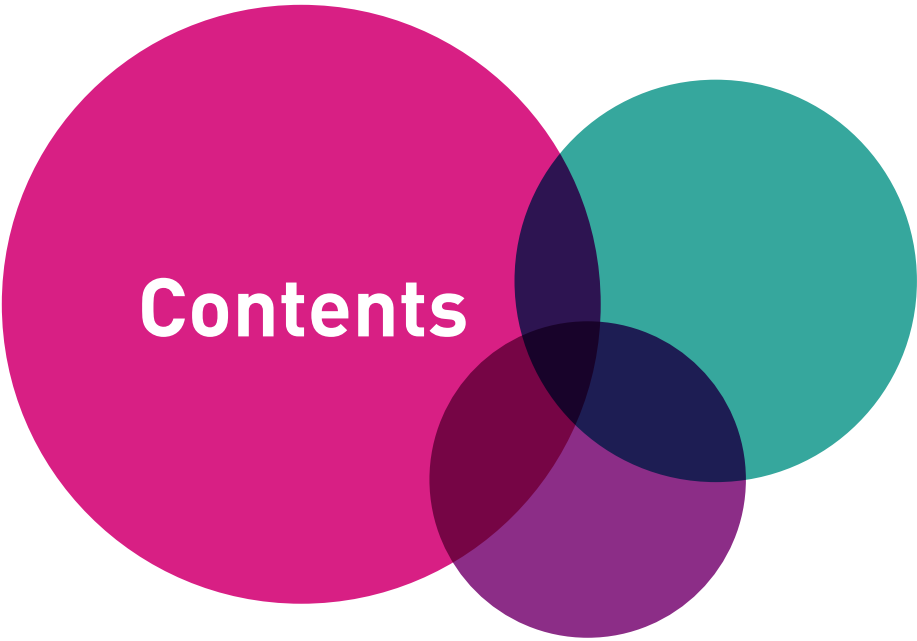
If you would like to find out more about TB Alert, the UK's national TB charity, please visit:  
[www.tbalert.org](http://www.tbalert.org)

We hope this pack proves useful for teachers and students alike. Please feel free to send us your feedback!

Best wishes

**Lewis Smith**  
Project Manager







## Optional Assembly Ideas

**Assembly:** What is TB?  
**Time:** 20 minutes

Before the assembly, revise the TB Fact Sheet for teachers from the resource pack, or visit [www.thetruthabouttb.org](http://www.thetruthabouttb.org) to revise the basic facts and current statistics of TB in the UK.

Access the presentation titled *What is TB?* on *The Truth About TB* website. Go through the presentation with students. This presentation can be expanded, or reduced, depending on assembly time, as it consists of seven detailed slides, and covers the following points:

### Slide 1 What Is TB?

- A description of TB, and who discovered the bacterium.
- Outlines what is latent TB, and active TB.

### Slide 2 TB Around The World And In The UK

- Facts and rates of TB globally.
- Facts of TB in the UK.
- Borough specific information.

### Slide 3 Symptoms

- Overview of the symptoms.

### Slide 4 Risk Factors

- Risk factors of TB.
- The importance of having a healthy lifestyle.

### Slide 5 How Is It Spread?

- Transmission of TB.
- Catch it, Bin it, Kill it—the importance of hygiene.

### Slide 6 Treatment

- Outlines how TB is a curable illness.

### Slide 7 Questions

- Questions to use with students to facilitate discussion.

### Closing

Finish the presentation by showing the video *Tuberculosis the Real Story*



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## Optional Assembly Ideas

**Assembly:** World TB Day (March 24th)  
**Time:** 20 minutes

### Summary

Invite a speaker from a charity or organisation that works with people that have had or have TB. Some organisations that you could contact are TB Action Group (TBAG) or TB Alert, found at [www.tbalert.org](http://www.tbalert.org)

### Introduction

Start by saying the following: *World TB day is celebrated every year on March 24th. It commemorates the day that Robert Koch told the world that he had discovered the tuberculosis bacterium. So what is TB? TB is a serious but treatable illness, which is caused by inhaling droplets containing the TB bacteria. One third of the world's population is infected with TB and around five thousand people die every day from it. So what are the symptoms of TB?*

Run through symptoms and key facts found in the teacher's handout within this resource.

### Introduce Speaker

Introduce the speaker to the students, and ask the speaker to go over their experience of tuberculosis or what work they do to help reduce TB. Ensure that the overall conclusion is that TB is curable and if students suspect that they, a friend, or relative may have TB, they should seek medical advice.

### Conclusion

After the speaker has finished talking, hand out the copies of the Fact Sheet and Get Involved document for students found in this pack. If this is a large assembly, advise students to visit [The Truth About TB](http://www.thetruthabouttb.org) website and find out more about how they can get involved: [www.thetruthabouttb.org](http://www.thetruthabouttb.org)

# Project: Medical, Social and Historical Impact of TB

**Time:** No strict time frame

## Project Ideas



### Aims

- To have students create an informative booklet on the medical, social, and historical impact of TB.

### Objectives

- Students will be able to understand the medical, social and historical impact of TB.
- Students put together an informative booklet dedicated to TB.

### Summary

#### Medical

In this section, students will look at the medical aspects of TB. They will focus on the key symptoms, risk factors, and treatment of TB. Have students begin by researching about how TB is spread, and then focus on the symptoms, risk factors, and finally the treatment. Encourage students to use the TB handout found in this resource pack to aid their research process, but remind them to also do extensive research with other resources. Have students collect and present all of their research into a simple and easily readable pamphlet.

#### Social

Students will write a report, which outlines the effects tuberculosis has had on society. It is important that students have a keen focus on how TB can be extremely isolating for those infected with the illness. Students must cover stigma and prejudice in their written report, by providing a definition of each, and highlight its connection to TB.

#### Historical

Students will create a timeline entitled TB THROUGH THE AGES. Students should find at least six momentous events throughout history that have been significant to TB. Ask students *Who discovered tuberculosis? What is the oldest record of tuberculosis in humans? What was the white plague? What is consumption?*

### Conclusion

After completing each section of this project, students will present their information in an informative booklet to the class.

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# Project: TB In My Community

**Time:** No strict time frame

## Project Ideas



### Aims

- Students will create an informative booklet about TB within their community.
- Students will research the rates of TB in their borough, and how it differs from other neighbouring boroughs.

### Objectives

- Students will be able to share information about TB with their community.
- Students will be able to improve their research skills.

### Summary

Students will research the rates of TB within their borough, neighbouring boroughs, the UK, and a few other select countries. They will be asked to record their information in a bar chart, or something similar, illustrating the differences or similarities between their results.

Students will research reasons as to why the rates might vary between boroughs, or countries. They will write a reflective essay, using their research to support their opinion as to why they think the rates are similar or different. Students should be encouraged to contact TB charities for further information, to look at common risk factors, and draw conclusions from this research.

### Conclusion

Once students have completed their research, ask them to share the informative booklet with their class. By working in pairs, students should share their information with their partner. Students should also be encouraged to share their work with their local community faith groups and religious groups. They should discuss their informative leaflet with each person they share it with and gather the opinions of those people. With all the information they gather, they should write a report summarising how the general public views TB.

**Subject:** Art  
**Age Range:** 11–14 (Key Stage 3)  
**Lesson Time:** Approximately 50 minutes



## Aims

- To teach students how art can be used to evoke strong emotions and how it can be used to relay the way in which one feels, thinks, or views a particular subject.

## Objectives

- Students will be able to analyse various works of art to see how their aesthetic qualities evoke emotions.
- Students will be able to develop their own artwork to represent what tuberculosis (TB) means to them.
- Students will be able to identify the common symptoms of TB and explain how it is spread.

## Curriculum Links

- Art, Unit 9A: Life Events.
- Critical understanding of artists, architects and designers.
- Analysis of art.

## Resources:

- Copies of the [Fact Sheet for students](#).
- Copies of the [Get Involved document for students](#).
- Copies of the following pictures:
  - T.B. Harlem*, Alice Neel (1900–1984)
  - La Miseria*, Cristóbal Rojas (1857–1890)
  - Sick Child*, Edvard Munch (1863–1944)



*Tuberculosis (TB) Symptoms Animation*



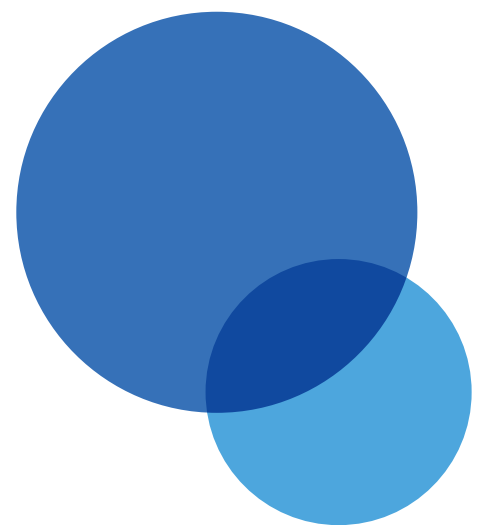
*World TB Day—Photo Essay*



*TB-Awareness Through Public Art*

## Suggestions for Further Development:

Have students share the artwork that they create with the rest of the school, or alternatively have students create a giant piece of artwork together. This can be done by each student creating a very small piece of work, which is then added bit by bit to create a large piece of work. Once this is done take photographs of the work and share them with your school, community and TB Alert. An example of this type of art project is the AIDS blanket: [www.aidsquilt.org](http://www.aidsquilt.org)





INTRO

1-2  
minutes

### Introduction

Divide the class into groups of three or four depending on the size of the class. Then, distribute a copy of one of the three pictures outlined in the resource section to each group.

DISCUSSION

10  
minutes

### What is it all About?

Ask students to begin by discussing the following questions *What can you see in the picture? What is happening? What do you think is the main idea or theme?* Ask each group to think about how the work makes them feel and why. Once each group has done this, ask them to share their ideas with the rest of the class. Other questions that could be used for group/class discussion:

- What could be a possible title for this work?
- What are the main themes explored in the work?
- What message/s does the work communicate?
- Who do you think the artist is?
- Can you link the work to other arts of the period, such as film, music, or literature?

After the discussion and speculation about what each piece of artwork could be about, introduce students to the titles and artists of the works. Questions that could be used after introducing the titles:

- Does the title change the way we see the work?
- Have any parts of the artwork been exaggerated or distorted?  
If so, why do you think the artist did this?
- What do you know about the artist?
- Does the work relate to the social or political history of the time?

Facilitate any discussion that may arise around TB.

DISCUSSION

10  
minutes

### Patients of Tuberculosis

Tell students that each patient in the three artworks is suffering from TB. Ask students *What do you know about TB? Do you think the artwork has effectively represented the illness?* Then, show students *Tuberculosis (TB) Symptoms Animation*. Afterwards, have a discussion with students about TB, informing them of the symptoms, treatment and risk factors of TB. Ensure that they know that TB is curable. Distribute copies of the Fact Sheet and the Get Involved document to each student.

DISCUSSION

5  
minutes

### Other Mediums

Ask students *Do you know of any examples where TB is expressed through art? Perhaps in photography, film or music?* Encourage creative thinking. Students could also look on the Internet to see if they can find any other examples.

VIDEO

10  
minutes

### World TB Day—Photo Essay

Watch *World TB Day—Photo Essay* produced by the Red Cross highlighting the importance of World TB Day through the medium of photography. Or alternatively watch *TB—Awareness Through Public Art*. After watching either one of the videos, discuss with students their views on the video. Ask students *What did you like? What did you learn? What scenes do you remember? Why? How did the video make you feel? What do you think about the work they are doing?*

ACTIVITY  
& HOMEWORK

10  
minutes

### Creation of TB Art

Ask students to create a piece of artwork representing what TB means to them. The artwork can be in any medium (e.g. *photography, film, music, theatre, painting*, etc). Have students brainstorm and write their idea during class, and then assign the task for homework. Once students have created their artwork they should share it with the rest of the class, school or local community group.

PLENARY

3  
minutes

### Plenary

Have students do one of the following tasks with a partner:

- List three things they have learned today.
- Summarise today's lesson in 60 seconds.
- Write down any new words that they have learned this lesson and their definitions.

**Subject:** Citizenship  
**Age Range:** 11–14 (Key Stage 3)  
**Lesson Time:** Approximately 50 minutes



## Lesson Plan: DEBATING A GLOBAL ISSUE

### Aims

- To introduce, discuss and debate global issues with a keen focus on tuberculosis (TB).

### Objectives

- Students will be able to engage in a conversation about a global issue.
- Students will be able to explore and share information about TB.
- Students will learn about the different ways media covers events, and its effects.

### Curriculum Links

- Citizenship, Unit 20: What's in the Public Interest?

### Resources

- Copies of the [Fact Sheet for students](#).
- Copies of the [Get Involved document for students](#).



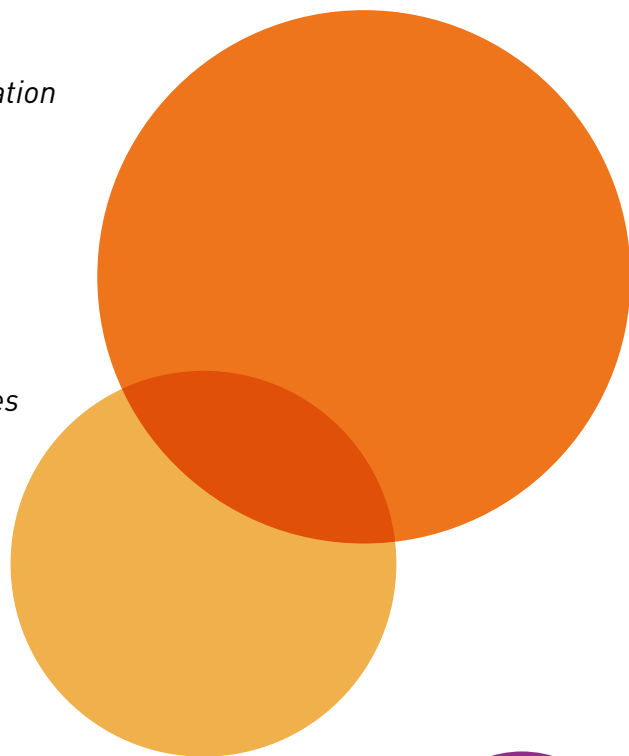
*Tuberculosis (TB) Symptoms Animation*



*World TB Day—WHO*



*WHO Warns—Tuberculosis Becomes More Resistant to Treatment*



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### Suggestions for Further Development:

Have students host a fundraising day to raise money for a TB charity. Students can generate ideas as a class. The idea could be a big school event or a small class event. Help students then create a campaign poster or press release for this event. The [Get Involved](#) documents found within this resource details further fundraising ideas for you and your students.

INTRO

5

minutes

### Introduction

Start the class by showing one of the videos in resource section. Have students discuss what they already know about tuberculosis. Ask *Do you have any first hand experience of TB or do you know someone who has had TB?* Encourage students to share their answers aloud with the rest of the class.

ACTIVITY

5

minutes

### Missing Word or Number

This is a class exercise, but could also be a small group exercise. Write the following facts on the board, but omit the figures in bold. Then, ask students to guess what they think it is. Students may be surprised by some of the facts. Facilitate any discussion that may arise from this exercise and lead it into the next discussion activity.

- In 2011, **8.7 million** people contracted TB.
- In 2011, a total of **1.4 million** people died from TB.
- In 2011, up to **70 000** children died due to TB globally.
- TB is the leading killer of people living with **HIV**.
- The number of people falling ill with TB is declining and the TB death rate dropped **41%** since 1990.
- **No** country has ever eliminated TB.
- In 2011, there were an estimated **630 000** people living with multidrug-resistant TB.
- About **51 million** TB patients have been successfully treated since 1996 worldwide.

DISCUSSION

5

minutes

### Discussion on Tuberculosis

Start by showing students the *Tuberculosis TB Symptoms Animation*. Then, have a discussion with students about TB, informing them of the symptoms, treatment and risk factors of TB. Ensure that they know that TB is curable. Distribute copies of the *Fact Sheet* and the *Get Involved* document to each student.

DISCUSSION

12

minutes

### Life and TB

Divide the class into groups of three or four. Then, ask them to think about how the lives of people with TB may be affected. Ask students *Are people's lives or employment directly affected by TB? If so, how? How is TB been portrayed in the press and on TV?* Have students discuss these questions within their groups. Encourage them to use the Internet or other resources to further develop their discussion. Afterwards, ask students to share their ideas with the rest of the class.

PAIR WORK

5

minutes

### TB and Science

Divide the class into pairs. Then, ask *What are the symptoms of the TB? Can the illness be treated? How does the microbe spread? What does vaccination mean?* Have students discuss these with their partner for two minutes. Then share the following with students: *There have been some key events in history which have led to public acceptance of new policies, for example, the cholera outbreaks in 19th century London created a notion of public health, and enabled statutory protective measures to be introduced.* Ask students to think of any public policies or immunisation campaigns around tuberculosis, and to discuss these with their partner.

GROUP WORK

15

minutes

### Campaign Work

Divide the class into groups of three or four. Have groups discuss what kind of campaign they would implement to prevent tuberculosis cases increasing in their community. Each group should use information and ideas from the prior discussion, and create a campaign backed up by scientific evidence. Guide students by asking *How many cases of TB are there in your community? Is language an issue? What would the campaign look like and who is it targeting specifically?* Then, allow students sufficient research time to complete the assignment and if necessary, complete this exercise in the following class. Finally, ask students to consider whether they could influence their local community, or take further action in some way. How would they do this? You might ask students to write a press release, or to design a campaign poster.

PLENARY

3

minutes

### Plenary

Have students do one of the following tasks with a partner:

- List three things they have learned today.
- Summarise today's lesson in 60 seconds.
- Write down any new words that they have learned this lesson and their definitions.

**Subject:** English and Drama  
**Age Range:** 11–14 (Key Stage 3)  
**Lesson Time:** Approximately 45 minutes



Lesson Plan:  
**CAMPAIGN  
AND NEWS  
REPORT**

## Aims

- To help students understand and recognise the stigma and prejudices that surround tuberculosis (TB).

## Objectives

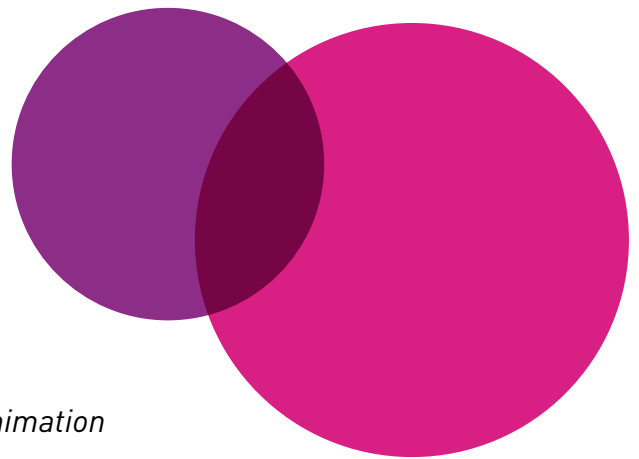
- Students will be able to identify the symptoms of TB.
- Students will critically analyse the stigma and prejudices surrounding TB.
- Students will create a piece of drama based on the stigma and prejudices surrounding TB.

## Curriculum Links

- Speaking and listening.
- Drama.

## Resources

- Copies of the [Fact Sheet for students](#).
- Copies of the [Get Involved document for students](#).
- Computers with Internet access.



*Tuberculosis (TB) Symptoms Animation*



*A Personal Struggle to Overcome TB (Philippines)*

### Suggestions for Further Development:

Have students develop a play in small groups around the stigma surrounding TB. Students will have full control and have to devise a piece they feel is suitable to perform at a school assembly. Students should have time to research the subject and generate ideas. Once students have performed this in a class assembly why not take it further and have them deliver it to a local community group or another school?

An alternative to this activity is to have each group explore the different aspects of TB such as the illness, stigma and treatment and put it together to make a montage of different scenes.

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## INTRO

7

minutes

### Introduction

Start by clearing an acting space in the classroom for students to work in. Have students find their place in the space. Give the class a scenario: *A doctor's waiting room*. Ask students *What conversations might happen in a doctor's waiting room? What types of illness or ailments might patients have?* Have students brainstorm different ideas aloud. Then, invite two students to enter the performing space and begin improvising a scene based around this scenario. Encourage them to be as creative as possible with both dialogue and action. At any moment, anyone else in the group may shout, *Freeze!* The actors must freeze. The student who shouted *Freeze!* taps one of the two actors on the shoulder. The actor sits down and the new person takes his or her position on stage. The new person must now initiate a new and different scene in the same setting and based around the same scenario. At any moment another student may shout, *Freeze!* And the process is repeated. Encourage everyone to have a turn.

## VIDEO

8

minutes

### Film, Stigma and Prejudices

Introduce students to the terms *stigma* and *prejudice* by giving the class a definition of each. Show the video *A Personal Struggle to Overcome TB (Philippines)* from the resources section. After watching the video discuss with students the following questions: *Have you ever felt like someone on that video? Why? How did it make you feel? Do you know of anyone who may have been excluded because they are ill?*

## DISCUSSION

10

minutes

### Discussion on Tuberculosis

As a class, talk about the different types of illness that might cause people to feel excluded. Then, show students *Tuberculosis (TB) Symptoms Animation*. Afterwards, have a discussion with students about TB, informing them of the symptoms, treatment, and risk factors of TB. Ensure that they know that TB is curable. Distribute copies of the Fact Sheet and the Get Involved document to each student. Then quote two or three of the following points in italics as a basis for discussion in the classroom:

- *TB is a disease of the past and not in the UK any more.* (In fact, around two billion people have latent TB, which is one third of the world's population.)
- *People associate TB with being poor and dirty.* (In fact, anyone can get TB, illness does not discriminate but there are risk factors that may contribute to making you more vulnerable to the disease such as being old or having a poor diet.)
- *People fear being ostracised from their community.*
- *There is a belief that TB is highly contagious.* (In fact, it is very difficult to catch TB. Inhaling droplets of the disease when someone is coughing or sneezing contracts this illness. You would have to be in close proximity to someone for around eight hours to be at risk.)
- *If you have TB you also have HIV.* (Many people associate TB with HIV although they are separate illnesses. Within certain countries HIV and TB co-morbidity is higher.)
- *If you have TB you will die.* (In fact, TB can be cured, however in some cases treatment can take as long as two years with multi-drug resistant tuberculosis.)

## PRACTICE

10-15

minutes

### Improvisation and Practice

Divide the class into groups of three or four. Tell the class they are going to devise a piece of drama around stigma or prejudice. Each group will have the choice to develop a play on either stigma or prejudice. Students need to create a news report about the subject. They will have three minutes to come up with ideas. The rest of the time should be spent rehearsing. They could use the video they watched earlier as a basis for their work. This can be a short piece of work or extended into the following class. Once they have had sufficient rehearsal time, invite students to perform their pieces in front of the rest of the class.

## FURTHER DEVELOPMENT

Optional

### Further Development

Have students write a reflective piece on what they have learnt today. It should be at least one standard page, and it should be about everything that was covered in the lesson today. Alternatively, students could select an aspect from the lesson such as stigma or TB, and write about it. This should be assigned as homework.

## PLENARY

5

minutes

### Plenary

Have students do one of the following tasks with a partner:

- List three things they have learned today.
- Summarise today's lesson in 60 seconds.
- Write down any new words that they have learned this lesson and their definitions.

**Subject:** English  
**Age Range:** 11–14 (Key Stage 3)  
**Lesson Time:** Approximately 40 minutes



Lesson Plan:  
**TB  
AND ME**

## Aims

- To introduce students to tuberculosis (TB) and its effects by looking at individual case studies.

## Objectives

- Students will create a rap song or poem about TB and its stigma.
- Students will learn about TB, and look at individual case studies.

## Curriculum Links

- Speaking and listening.
- Writing.
- Grammar.
- Vocabulary.
- Punctuation.

## Resources

- Copies of [case studies](#).
- Copies of the [Fact Sheet for students](#).
- Copies of the [Get Involved document for students](#).
- Computers with Internet access.



*The Truth About TB*



*Tuberculosis (TB) Symptoms Animation*



*Life in a Day—180 Days Spent in Quarantine*

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### Suggestions for Further Development:

Have students record their poem or rap, and share it with the school in an assembly showcase. Alternatively, they could share it with friends, family, or a charity working on TB prevention. Students could also make a recording of their poem or rap with their phones, or if video facilities are readily available, a music video.

**INTRO****5**  
minutes**Introduction**

Ask students *What do you know about TB? What do you already know about TB? Has anyone you know ever had TB? What are the common symptoms of TB? What treatment can you seek if you have TB?* Then, show students *Tuberculosis (TB) Symptoms Animation*. Afterwards, have a discussion with students about TB, informing them of the symptoms, treatment, and risk factors of TB. Ensure they know that TB is curable. Distribute copies of the Fact Sheet and the Get Involved document to each student.

**VIDEO****Optional****Video and Discussion**

Show students the video *The Truth About TB*. Afterwards, ask students *How did the film make you feel? Were you surprised by anything you watched? What did you learn? What is pulmonary TB? On average, how soon after you start treatment for TB do you stop being contagious?*

**DISCUSSION****10**  
minutes**TB and Me**

Tell students they are going to look at individual case studies from people who have suffered from TB. Ask students to use the following questions as discussion prompts for each case study:

- What issues might each case study have faced when accessing health services?
- What are some of the challenges that they may have faced on their TB journey?
- How do you think they would feel telling their friends or family that they have TB?
- What advice or reassurance would you give them?

**VIDEO****10**  
minutes**Life in a Day**

Explain to students they are going to watch a video entitled *Life in a Day, 180 Days Spent in Quarantine*. Tell students *This video is about a man named Christiaan Van Vuuren, also known as The Fully Sick Rapper. Christiaan Van Vuuren was admitted into quarantine in a Sydney hospital for TB on two different occasions. He produced videos about his illness whilst in quarantine. He was admitted twice to hospital after his tuberculosis proved resistant to medication. He has gone on to promote World Tuberculosis Day with the World Health Organisation.* Remind students that most TB cases do not require quarantine. Then show students the video *Life in a Day, 180 Days Spent in Quarantine*. After the video, ask *What did you like about the video? Why? What didn't you like about the video? Why?*

**ACTIVITY****10**  
minutes**Let's Get Creative**

Now tell students that they will create a rap or poem about TB. The rap or poem should focus on the stigma people face when diagnosed with TB. Have students work individually or in pairs. Once they have written their rap or poem, have students present it to the rest of the class.

**PLENARY****5**  
minutes**Plenary**

Have students do one of the following tasks with a partner:

- List three things they have learned today.
- Summarise today's lesson in 60 seconds.
- Write down any new words that they have learned this lesson and their definitions.

# Case Studies: The Truth About TB



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## Case Studies: The Truth About TB



### MY TB STORY: ALBERTO

Name: Alberto

Age: 36

Gender: Male

Ethnicity: Black African

Lives In: Manchester

Alberto is originally from the Cape Verde Islands, but came to the UK from Portugal in 2001. Alberto is a EU citizen, but his passport has expired.

He is HIV positive, and lives in one bedroom with his partner in a shared house. They are both non-English speaking. He is not in receipt of benefits, and lives on his partner's benefits. His partner cares for him as he suffers HIV dementia.

Alberto was diagnosed with multi-drug resistant TB after his health deteriorated rapidly. His treatment is likely to take twelve months or more. He was referred to TB alert's patient support fund through his TB nurse for support to buy a new cooker. Currently Alberto and his partner live off take-away food.



### MY TB STORY: DAVID

Name: David

Age: 47

Gender: Male

Ethnicity: Black African

Lives In: London

David's life was chaotic. He was sleeping rough, drinking a lot of alcohol and not eating properly.

He developed a cough that got worse over time. He was lethargic, suffered cold sweats, and got out of breath from just going up the road. As it got harder for him to breathe, he accepted that something was wrong with his health and went to see a doctor. However, he collapsed before they were able to refer him for tests. David was diagnosed in hospital with drug-resistant TB.

"My TB was drug resistant and they kept saying, 'make sure you take your medication'. At the time I didn't know why. Obviously I'm going to take my medication. But I had to take at least sixteen or seventeen tablets a day, which was difficult."

David was referred to Find and Treat, which is a project that helps detect, diagnose and manage TB in hard-to-reach groups across London. The team supervised him through Directly Observed Treatment (DOT). Under this programme, his tablets were given to him three times a week by a social worker, and he had to take these with her supervision.

"Now that I am fully recovered, I am working as a peer educator for Find and Treat. I visit hostels, day centres and drug services with the mobile X-ray van, which screens people for TB. I use my experience to connect with people and encourage them to get screened. I also give talks and training to people who are homeless and the organisations that support them."

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## Case Studies: The Truth About TB



### MY TB STORY: LOUISE

Name: Louise

Age: 31

Gender: Female

Ethnicity: White, British

Lives In: London

Louise was diagnosed with a chest infection, and prescribed antibiotics. However, her symptoms did not improve after treatment, even though she also gave up smoking.

Louise went back to her GP with on-going symptoms: a cough, weight loss, sweats and a general feeling of tiredness. Louise's doctor prescribed inhalers, antibiotics and painkillers, but her condition did not improve.

When Louise coughed up blood she went to A&E. They gave her a chest X-ray, which showed abnormal findings. Louise was immediately admitted to hospital and put into isolation with suspected TB. Three sputum samples she provided confirmed that she was ill with TB and Louise was put on treatment. Precautionary tests on her family, friends and colleagues also came back with many positive results including her mother, father, and sister. The majority of them required treatment for latent TB, although her sister was found to have active TB.

Louise is now in good health, and has a positive outlook for the future, but the emotional impact of TB remains strong: "I have suffered terrible feelings of guilt for the people I infected. I have also received weird reactions from people I know and love; when they found out that I had TB. My consultant told me that TB brings out 'the hysterical' in people – now I know that he was telling the truth!"



### MY TB STORY: NAAILAH

Name: Naailah

Age: 23

Gender: Female

Ethnicity: Black African

Lives In: Birmingham

Naailah arrived in the UK from Zambia in 2009 and claimed asylum upon arrival. She was initially held in an immigration detention centre and later released to stay in supported accommodation, whilst her application was being processed.

Naailah has very few friends and no family in the UK, and she lives on benefits of £5 per day. In 2010, Naailah collapsed in the street. She had been suffering from TB symptoms such as a cough, night sweats, fever and weight loss. These symptoms had been going on for many months, but she had been scared to do anything about it, hoping that they would go away. After tests, she was diagnosed with TB and started on treatment.

As Naailah is on a limited income, she found it difficult to travel to the hospital for all the appointments required for her TB treatment. As a result, she stopped her treatment when she began to feel better. Her symptoms then returned, and she was diagnosed with multi-drug resistant TB (MDR-TB). This type of TB requires intensive and closely managed treatment, but her TB Nurse is currently finding it difficult to get Naailah to take her medication. Naailah has a limited understanding of English, and seems to believe that she is destined to die from the illness, so treatment is worthless.

THE  
TRUTH  
ABOUT  
TB

## Case Studies: The Truth About TB



### MY TB STORY: NATALIE

Name: Natalie

Age: 26

Gender: Female

Ethnicity: White British

Lives In: Huddersfield

Whilst Natalie was pregnant with her first son, she started suffering from a pain in her kidneys. She was told it was a pregnancy related illness and advised to take paracetamol. After her son James was born Natalie suffered from what she thought were urinary infections. The antibiotics she was prescribed didn't seem to make her any better. When she was pregnant for a second time, her kidney pain was once again considered to be pregnancy related.

"By this time I could hardly walk. I was scared the doctors wouldn't believe me. Sometimes I just didn't bother going because it never seemed to get anywhere. It was a nurse who eventually tested me for TB. She had tested me for everything else and a colleague suggested she test for TB."

Natalie was found to have TB in her kidneys and was started on TB treatment, which lasted for six months. During the treatment, Natalie suffered from nausea, heartburn and a rash on her face. Her nurse told her these were side effects from the TB medication.

"A few times I would think, today I won't bother to take them, but then I would look at my kids and think, no, I've got to."



### MY TB STORY: SUNITA

Name: Sunita

Age: 30

Gender: Female

Ethnicity: South Asian

Lives in: Birmingham

Sunita lives with her husband and three children in a small flat above the shop she runs with her husband. Sunita's father moved to Britain from Bangladesh with his children, after her mother died from TB when Sunita was a teenager.

In 2010, Sunita began to cough, lose weight, and felt so tired that she struggled to look after her children and home. But she tried to continue her life as though she felt normal, and convinced herself that her symptoms were nothing serious. It was only when she collapsed that her husband took her to A&E. Sunita was admitted for tests and later diagnosed with TB.

During her treatment, Sunita did not work and rarely left the house. Concerned friends were told that she was visiting relatives in Bangladesh. Now that she is cured from TB, she is glad to put her experience behind her, and move on.

THE  
TRUTH  
ABOUT  
TB

**Subject:** Geography  
**Age Range:** 11–14 (Key Stage 3)  
**Lesson Time:** Approximately 50 minutes



## Lesson Plan: **PLANNING AND HOUSING**



### Aims

- To introduce the effect that poor housing has on a person's health.

### Objectives

- Students will learn about how inadequate housing contributes to poor health.
- Students will be able to explain how tuberculosis (TB) is spread, and the common symptoms to look out for.

### Curriculum Links

- Geography, Unit 16: What is Development?
- Geography, Unit 20: Comparing Countries.

### Resources

- Copies of the [Fact Sheet for students](#).
- Copies of the [Get Involved document for students](#).



Archive

[www.archiveglobal.org](http://www.archiveglobal.org)



NHS Choices

[www.nhs.uk](http://www.nhs.uk)



*Tuberculosis (TB) Symptoms Animation*



*ARCHIVE—Poor Housing Causes Ill Health*



*Global Experts Talk Tuberculosis and Housing Design*

### Suggestions for Further Development:

Have students contact ARCHIVE at [www.archiveglobal.org](http://www.archiveglobal.org) and ask them about the work they do around housing and health. Ask students to find out what ARCHIVE is doing in their local area and worldwide. Students could also invite one of their employees to come to their school and give a talk about the importance of their organisation and work. Additionally, students could follow their updates on Twitter or Facebook, or support their work by arranging a fundraising day for them.

THE  
TRUTH  
ABOUT  
TB

## INTRO

5  
minutes

### Introduction

Divide the class into groups of three or four. Ask each group to write a list of ten things that they think are essential to live their life. Then, have a member from each group share their list with the rest of the class. Discuss briefly with students why they have chosen certain items on their list.

## DISCUSSION

7  
minutes

### Basic Determinants of Health

Ask each group to develop their lists further by asking them to think of all the things they need to be healthy. Give them a couple of minutes to do this task. Then, introduce the class to the basic determinants of health:

- The social and economic environment.
- The physical environment.
- The person's individual characteristics and behaviours.

Go through the above points with the class and elicit from students what they think each one is about. Use the information below to guide students to possible answers:

- Social and economic environment—*living in a developed or developing country, having good health service*
- The physical environment—*being in a slum, living in the countryside, the overall climate*
- The person's individual characteristics and behaviour—*gender, genetics*

Students should cover housing within the physical environment section: if not prompt them to come up with the idea. Tell the class that they will now focus on housing and the effect that it can have on a person's health. Ask students what they consider as inadequate housing and if they think it may contribute to a person's health.

## DISCUSSION

20  
minutes

### Tuberculosis and Housing

Show students the *Tuberculosis (TB) Symptoms Animation*. Afterwards, have a discussion with students about TB, informing them of the symptoms, treatment, and risk factors of TB. Ensure that they know that TB is curable. Distribute copies of the Fact Sheet and the Get Involved document to each student. Next, tell students *You are going to watch a video about the effects of poor housing on health, and how this might contribute to certain illnesses such as tuberculosis*. Then, show either *ARCHIVE—Poor Housing Causes Ill Health* or *Global Experts Talk Tuberculosis and Housing Design*. Afterwards, have a class discussion about why poor housing may contribute to illness.

## PROJECT WORK

15  
minutes

### Poor Housing Project

Tell students that they are going to conduct a research project on poor housing and its effects on health. This will be an individual project. Furthermore, they will research the way poor housing might impact someone who suffers from an illness like TB. Then, ask that they research tuberculosis and housing by starting with the ARCHIVE website, and the NHS Choices website, found in the resource section. The main aim is that students provide a written piece outlining the effects that housing has on health. Students will need to list all the factors that contribute to poor housing and the impact that they might have on health. Assign part of this project to be done in-class, and the rest for homework.

## PLENARY

3  
minutes

### Plenary

Have students do one of the following tasks with a partner:

- List three things they have learned today.
- Summarise today's lesson in 60 seconds.
- Write down any new words that they have learned this lesson and their definitions.

**Subject:** Geography and ICT  
**Age Range:** 11–14 (Key Stage 3)  
**Lesson Time:** Approximately 40 minutes



## Lesson Plan: **TUBERCULOSIS AROUND THE WORLD**



### **Aims**

- To introduce to students the impact that tuberculosis (TB) has on different countries around the world.

### **Objectives**

- Students will learn about the social, economic and cultural impact of TB in various countries.
- Students will be able learn how to search on the Internet in a systematic method to find information.
- Students will collect, analyse, and present data.
- Students will be able to explain the symptoms of TB.

### **Curriculum Links**

- Geography, Unit 3: People Everywhere.
- Geography, Unit 20: Comparing Countries.
- ICT.

### **Resources**

- Copies of the world map.
- Computers with Internet access.
- Copies of the [Fact Sheet for students](#).
- Copy of the [Fact Sheet for teachers](#).
- Copies of the [Get Involved document for students](#).
- Internet resource on TB figures:



*World Health Organisation*  
[www.who.int](http://www.who.int)



*Tuberculosis (TB) Symptoms Animation*

THE  
TRUTH  
ABOUT  
TB

### **Suggestions for Further Development:**

As an additional activity, have students look at the following website: [www.onemillion.theglobalfund.org](http://www.onemillion.theglobalfund.org)

Ask students to write a short piece about what the Global Fund is doing to fight illnesses around the world. Ask students to detail the scope of the problem, what they are doing to fight TB and the successes they have had so far.

**INTRO****2**  
minutes**Introduction**

Divide the class into groups of three or four. Distribute a copy of a world map to each group. Have groups select two or three countries from the map that they feel they know the most information about.

**GROUP WORK****8**  
minutes**General Knowledge**

Have each group discuss all the information they know regarding their selected countries. Ask students *What language is spoken? What is the population? What is the capital city? What is the weather like? What is the country well-known for?* Give students about five minutes to respond to these questions amongst their groups. Afterwards, have each group present their information on the country they know the most about to the rest of the class.

**DISCUSSION****10**  
minutes**Life Expectancy Around the World**

Ask students to check the life expectancy for their chosen country on the Internet. Give students about five minutes to do this. Once this is done, bring the class back together, and ask students *Why do people in some countries have a lower life expectancy than in others?* Discuss with students the different factors that can influence life expectancy such as housing, environmental factors, social and economic factors, and illnesses.

**DISCUSSION****7**  
minutes**Discussion on Tuberculosis**

Show students *Tuberculosis (TB) Symptoms Animation*. Afterwards, have a discussion with students about TB, informing them of the symptoms, treatment, and risk factors of TB. Ensure that they know that TB is curable. Distribute copies of the Fact Sheet and the Get Involved document to each student. Then, ask students *What do you know about TB in the UK? What kind of impact does it have on this country? How is it viewed socially?*

**RESEARCH****10**  
minutes**Tuberculosis and Their Chosen Country**

Have students work in their same groups. Ask them to check the statistical rate of TB in their chosen country. Give an example for the UK (this information can be found in the Teacher Fact Sheet). Have students make use of the Internet link provided in the resources section. Once students have tracked down their information, ask that they compare their rate to that of the UK. Ask students *Is it higher or lower? Why do they think there is a difference? What factors could be influencing the rates of TB around the world?* Elicit from students that certain factors can influence the rates of illnesses.

**WRITING & HOMEWORK****10**  
minutes**Written Report**

Ask students to work in their groups and have them write a report about each country they covered in the previous exercises. Students will need to cover the general facts about their chosen countries and what the rate of TB is there. This work could be displayed in the class or on a notice board in the school. Ask students to create a board with the country profile—if each group does different countries they will have a strong overview around the world and be able to draw comparisons between them all.

Students should start this work in the class and complete it as homework or in the following class.

**PLENARY****3**  
minutes**Plenary**

Have students do one of the following tasks with a partner:

- List three things they have learned today.
- Summarise today's lesson in 60 seconds.
- Write down any new words that they have learned this lesson and their definitions.

**Subject:** History  
**Age Range:** 11–14 (Key Stage 3)  
**Lesson Time:** Approximately 40 minutes



Lesson Plan:  
**SCIENTIFIC  
DISCOVERIES  
THAT CHANGED  
THE WORLD**

## Aims

- To teach students about the discoveries that Robert Koch made in regards to tuberculosis (TB).

## Objectives

- Students will be able to demonstrate their understanding about pre-scientific theories of the spread of TB.
- Students will build their skills of investigation.
- Students will produce a poster.

## Curriculum Links

- Science, Unit 21: From Aristotle to the Atom: scientific discoveries that changed the world? Section 4: Miasma or Germs. How is Disease Spread?

## Resources

- Copies of the [Fact Sheet for students](#).
- Copies of the [Get Involved document for students](#).
- A copy of *A representation of the cholera epidemic of the nineteenth century* taken from the National Library of Medicine photographic archive.



*A representation of the cholera epidemic of the nineteenth century from the National Library of Medicine photographic archive*



*Tuberculosis (TB) Symptoms Animation*

### Suggestions for Further Development:

Have students visit the KS3 BBC Bitesize website on medicine through the ages and write a summary of how medicine has evolved through the ages: [www.bbc.co.uk](http://www.bbc.co.uk)

Have students listen to a BBC recording *Culturing the Germ Theory*: [www.bbc.co.uk](http://www.bbc.co.uk)  
Then, ask them to write a summary of the recording, highlighting the main idea and supporting details.

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TRUTH  
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## INTRO

5

minutes

### Introduction

Show students the painting, *A representation of the cholera epidemic of the nineteenth century*, taken from the National Library of Medicine photographic archive. Ask students *What do you think this painting represents? What can you see? What symbols can you identify?* Guide students to look at all elements of the painting. Then, share with students the theme of the painting and explain that it is a representation of the cholera epidemic, based on the miasma theory. Ask students *Do you know what the miasma theory is?* Tell students *The miasma theory is the belief that people become ill due to a poisonous vapour (miasma). Miasma contains particles of decaying matter, and it is characterised by its foul smell.*

## GROUP WORK

15

minutes

### Theories on illness

Divide the class into eight groups. Tell students that they will investigate theories about how illness was thought to be spread. Assign each group one theory from the list below. They must investigate this theory in detail, and then present their information to the class in a one minute summary.

- **Seed/Spore Theory** by Girolamo Fracastoro. In 1546 he proposed that illnesses were spread by transferable seed-like entities. These seed-like entities could transfer illnesses by direct or indirect contact.
- **Contagion Theory**: The communication of disease from one person to another by close contact.
- **Miasma Theory**: Have students go into more detail based on the introductory material.
- **Spontaneous Theory**: The theory that disease and other living beings can appear spontaneously. This has now been discredited.
- **Evil Spirits**: The belief that evil spirits and masters of these spirits such as witches and wizards were causing a person to be ill. This has now been discredited.
- **Humorism**: A theory adopted by the ancient Greeks and Romans about the theory and workings of the human body.
- **Royal Touch or King's Evil**: The belief that a touch from the king could cure disease. This has now been discredited.
- **Germ Theory of Disease**: Refers to the discovery in the late 19th century that some infectious diseases are caused by microorganisms. Louis Pasteur and Robert Koch developed this work. This theory supplanted the contagion and miasma theory.

## RESEARCH

10

minutes

### Who is Robert Koch?

Students will research Robert Koch's work regarding tuberculosis. Tell students *Robert Koch is considered by many to be the founder of modern bacteriology. He identified the specific agents of tuberculosis, cholera and anthrax. As a result of his research on tuberculosis, Koch received the Nobel Prize in Physiology of Medicine in 1905.* Have students work in the same groups to find out an interesting fact about Robert Koch and his work. Then, have them share these facts with the rest of the class.

## DISCUSSION

5

minutes

### Tuberculosis

Show students *Tuberculosis (TB) Symptoms Animation*. Afterwards, have a discussion with students about TB, informing them of the symptoms, treatment and risk factors of TB. Ensure that they know TB is curable. Distribute copies of the Fact Sheet and the Get Involved document to each student.

## ACTIVITY

Optional

### Public Health Poster

Have students create a poster which informs the general public in the 1880's on how to protect themselves from the spread of illnesses by germs that travel through the air, with the main focus on the TB germ. The poster should detail how germs are spread, how to protect themselves and what treatment may be available. Once students have created their poster they will share it with the rest of the class. If it's possible, they could be attached to walls so other students from different classes can see them.

## PLENARY

5

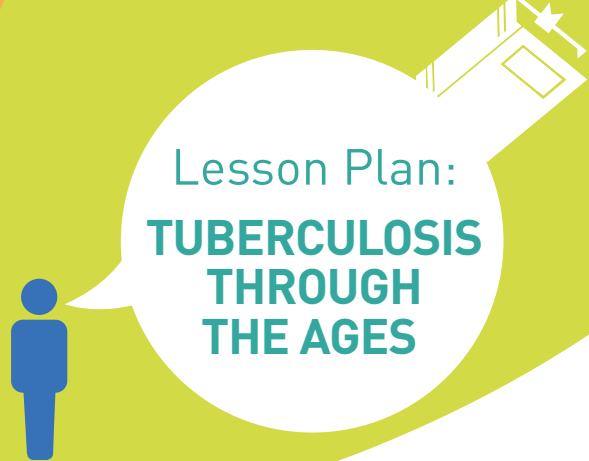
minutes

### Plenary

Have students do one of the following tasks with a partner:

- List three things they have learned today.
- Summarise today's lesson in 60 seconds.
- Write down any new words that they have learned this lesson and their definitions.

**Subject:** History  
**Age Range:** 11–14 (Key Stage 3)  
**Lesson Time:** Approximately 50 minutes



## Lesson Plan: TUBERCULOSIS THROUGH THE AGES

### Aims

- To introduce to students the historical importance of tuberculosis (TB).

### Objectives

- Students will enhance their research and presentation skills.
- Students will be educated about the history of TB.

### Curriculum Links

- Science, Unit 21: From Aristotle to the Atom: Scientific Discoveries that Changed the World? Section 4: Miasma or Germs: How is disease spread?
- History of the UK and the World.

### Resources

- Copies of the [Fact Sheet for students](#).
- Copies of the [Get Involved document for students](#).
- Copy of [Fact Sheet for teachers](#).
- Access to the Internet and/or a library.



*Tuberculosis (TB) Symptoms Animation*



*Defeat Tuberculosis*



THE  
TRUTH  
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TB

### Suggestions for Further Development:

Have students create a timeline of the key milestones of tuberculosis. This timeline should detail the earliest known person to have TB, one or two of Robert Koch's discoveries, the introduction of antibiotics and any other key points in the history of TB. Once students have created their timeline, have them present it to the rest of the class, and dedicate a section of the classroom to display their work.

## INTRO

10

minutes

### Introduction

Explain to students that they will complete a research project around TB. Explain to students that they are going to watch a video that was made in the 1950s on illness prevention. Show them the video *Defeat Tuberculosis*. After watching the video, lead the class in a discussion regarding what they learned. Ask students *What did you find interesting about the video? Do you think treatment is different now? Who discovered the germ? Summarise the different points of view explored in the video. Which one did you agree with? Why?* It is important to note that this video was made in the 1950s, and therefore certain facts, figures, and treatments have changed. This video should **not** be used as a basis for treatment or self-diagnosis.

## DISCUSSION

5

minutes

### Tuberculosis

Show students *Tuberculosis (TB) Symptoms Animation*. Afterwards, have a discussion with students about TB, informing them of the symptoms, treatment, and risk factors of TB. Ensure that they know that TB is curable. Distribute copies of the Fact Sheet and the Get Involved document to each student.

## PROJECT WORK

30

minutes

### History Project

Divide the class into groups of three or four. Tell students that they will conduct a research project about the history of TB, and there will be certain key points that they need to cover. Give students approximately twenty minutes to do all the research, and approximately ten minutes to write down the facts. Please note that this timeframe can be amended to suit the class's needs, and this can also be assigned as homework.

Students must cover all of the following points:

- Provide a brief overview of tuberculosis through the ages.
- What has tuberculosis also been known as? *White plague, consumption, phthisis, scrofula and Pott's disease.*
- What is a sanatorium and what did you do there? *A sanatorium is a medical facility for long-term illness. Before the introduction of antibiotics it was used to treat tuberculosis.*
- Who identified the TB organism, and what else did they discover? *Robert Koch, tuberculosis and anthrax.*
- What was the royal touch? *It was believed that the royal touch—the touch of the King or Queen of England or France—could cure disease.*
- What was the white plague? *The tuberculosis epidemic in Europe, which probably started in the 17th century and which lasted two hundred years.*
- What is the earliest evidence for TB in humans, and where was it found? *Nine thousand year old remains of a mother and her baby were discovered off the coast of Israel.*  
[www.news.bbc.co.uk](http://www.news.bbc.co.uk)
- What famous people have had TB? *Nelson Mandela, Tom Jones and Desmond Tutu.*

Once each group has completed their research, ask that they work on an effective way to present their research on one of key points to the rest of class.

## PLENARY

5

minutes

### Plenary

Have students do one of the following tasks with a partner:

- List three things they have learned today.
- Summarise today's lesson in 60 seconds.
- Write down any new words that they have learned this lesson and their definitions.

**Subject:** French  
**Age Range:** 11–14 (Key Stage 3)  
**Lesson Time:** Approximately 50 minutes



Lesson Plan:  
**CA VA?**

## Aims

- To introduce students to key vocabulary around health, specifically tuberculosis (TB).

## Objectives

- Students will learn key vocabulary to express how they feel regarding their health, and how to properly converse with a doctor.
- Students will be able to identify the symptoms of TB and learn about where they can seek treatment.

## Curriculum Links

- French, Unit 13: Ca Va?

## Resources

- Copies of the [Fact Sheet](#) for students.
- Copies of the [Get Involved](#) document for students.
- Copy of [Fact Sheet](#) for teachers.
- Computers with Internet access.
- Copies of the Fact Sheet for students.
- Copies of the Get Involved document for students.



*Tuberculosis (TB) Symptoms Animation*



*Premières nations—Allez passer des tests de sépistage de la tuberculose!*



THE  
TRUTH  
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TB

### Suggestions for Further Development:

Have students create a comic strip in French based around the symptoms of TB, and what to do if they have these symptoms (e.g. go to the doctor). The comic strip should be at least one page of standard A4 paper. Once students have completed their comic strip, have them share it with the school or their local community group.

## INTRO

10

minutes

**Introduction**

Start the class by making a list of the symptoms of TB on the board in French, with the English translation next to it. Elicit the correct answers *persistent cough, breathlessness, lack of appetite, weight loss, high temperature, night sweats, tiredness, unexplained pain*. Then, go through the correct TB symptoms with students in French. Go through the correct symptoms with students, and practice drilling the French word for each symptom. Afterwards, show students the *Tuberculosis TB Symptoms Animation*. Then, have a discussion with students about TB, informing them of the symptoms, treatment, and risk factors of TB. Ensure that they know that TB is curable. Distribute copies of the Fact Sheet and the Get Involved document to each student.

## ACTIVITY

10

minutes

**Parts of the Body**

Go through the different parts of the body with students. Have students repeat what you are saying, and encourage them to give answers without prompting. Use the following list as a guide:

- arm: *le bras*
- back: *le dos*
- elbow: *le coude*
- eyes: *les yeux*
- foot: *le pied*
- head: *la tête*
- knee: *le genou*
- leg: *la jambe*
- neck: *le cou*
- shoulder: *une épaule*
- tooth: *la dent*

## ACTIVITY

15

minutes

**New Language—Have, Be, Since**

Introduce students to the new words that you will be using in French. Present the verbs *have* and *be*, as well as the adverb of time *since*. Cover the following points:

- expressions with *avoir* and *être*
- *depuis* + present tense
- adverbs of time
- an introduction to verbs taking *à* or *de* + infinitive

Introduce this new language to students. Use illness as an example to practice this new language. An example could be *I have been ill since, I have had a cough since*. Ask students to practice in pairs asking each other: *Where is the pain? How long have you had the pain?*

## ROLE PLAY

10

minutes

**Role-play**

Divide the class into pairs. Explain to students that they will take part in a role-play, where they will explore a range of scenarios visiting the *doctor*. One student will play the *patient*, while the other student will play the *doctor*. Ask each *patient* to explain to their *doctor* the symptoms of TB they have been experiencing. The *doctor* must respond appropriately, and give recommendations for treatment, whilst also asking further questions about the illness.

## PLENARY

5

minutes

**Plenary**

Have students do one of the following tasks with a partner:

- List three things they have learned today.
- Summarise today's lesson in 60 seconds.
- Write down any new words that they have learned this lesson and their definitions.

**Subject:** Spanish  
**Age Range:** 11–14 (Key Stage 3)  
**Lesson Time:** Approximately 45 minutes



## Lesson Plan: **LA SALUD**

### Aims

- To introduce students to key vocabulary around health, specifically tuberculosis (TB).

### Objectives

- Students will learn key vocabulary to express how they feel regarding their health, and how to properly converse with a doctor.
- Students will be able to identify the symptoms of TB and learn about where they can seek treatment.

### Curriculum Links

- Spanish, Unit 9: La Salud.

### Resources

- Computers with Internet access.
- Copies of the [Fact Sheet for students](#).
- Copies of the [Get Involved document for students](#).



*Tuberculosis (TB) Symptoms Animation*



*Prevention—Tuberculosis*



*Tuberculosis*

### Suggestions for Further Development:

Have students create a comic strip in French based around the symptoms of TB, and what to do if they have these symptoms (e.g. go to the doctor). The comic strip should be at least one page of standard A4 paper. Once students have completed their comic strip, ask them to share it with the school or their local community group.



THE  
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ABOUT  
TB

**INTRO****10**

minutes

**Introduction**

Start the class by making a list of the symptoms of TB on the board in Spanish, with the English translation next to it. Elicit the correct answers *persistent cough, breathlessness, lack of appetite, weight loss, high temperature, night sweats, tiredness, unexplained pain*. Go through the correct TB symptoms with students in Spanish. Practice drilling the Spanish word for each symptom. Afterwards, show students the *Tuberculosis TB Symptoms Animation*. Then, have a discussion with students about TB, informing them of the symptoms, treatment, and risk factors of TB. Ensure that they know that TB is curable. Distribute copies of the Fact Sheet and the Get Involved document to each student.

**ACTIVITY****20**

minutes

**Parts of the Body**

Go through the different parts of the body with students. Have students repeat what you are saying, and encourage them to give answers without prompting. Use the following list as a guide:

- arm: *el brazo*
- back: *la espalda*
- elbow: *el codo*
- eye: *el ojo*
- foot: *el pie*
- head: *la cabeza*
- knee: *la rodilla*
- leg: *la pierna*
- neck: *el cuello*
- shoulder: *el hombro*
- tooth: *el diente, la muela*

**ACTIVITY****10**

minutes

**The Verb Doler**

Introduce the verb *doler* by explaining to students when and how this verb is used. One way to introduce this verb is to play a game, where students mime and guess symptoms, and use expressions to describe them, such as, *Te duele la cabeza*. This game could also incorporate language structures such as *tengo dolor de* + noun. Students could develop this even further by asking about the symptoms, eg *¿Te duele la garganta? ¿Tienes dolor de garganta?*

**ROLE PLAY****10**

minutes

**Role-play**

Divide the class into pairs. Explain to students that they will take part in a role-play, where they will explore a range of scenarios visiting the *doctor*. One student will play the *patient*, while the other student will play the *doctor*. Ask each *patient* to explain to their *doctor* the symptoms of TB that they have been experiencing. The *doctor* must respond appropriately, and give recommendations for treatment, whilst also asking further questions about the illness.

**VIDEO**

Optional

**Prevention of TB and Multidrug-Resistant Tuberculosis (MDRTB)**

Watch either of the videos in the resource section entitled *Tuberculosis or Prevention—Tuberculosis*. After the video, ask students *Did you find video useful? What did you learn? Was the message in the video well presented? Did you understand most of the language? What is MDRTB?*

**PLENARY****5**

minutes

**Plenary**

Have students do one of the following tasks with a partner:

- List three things they have learned today.
- Summarise today's lesson in 60 seconds.
- Write down any new words that they have learned this lesson and their definitions.

**Subject:** Mathematics and ICT  
**Age Range:** 11–14 (Key Stage 3)  
**Lesson Time:** Approximately 45 minutes



Lesson Plan:  
**INTRODUCTION  
TO  
EPIDEMIOLOGY**

## Aims

- To introduce to students epidemiology by looking at the impact tuberculosis (TB) has around the world.

## Objectives

- Students will be able to look at the number of TB cases worldwide.
- Students will be able to demonstrate they can search on the Internet in a systematic method to find information.
- Students will be able to show how they can collect, analyse and present data.

## Curriculum Links

- ICT.
- Number and algebra.
- Statistics.
- Accuracy and rounding.
- Graphs.
- Presentation and analysis.

## Resources

- Copies of the [Fact Sheet](#) for students.
- Copies of the [Get Involved](#) document for students.



*Information is Beautiful*  
[www.informationisbeautiful.net](http://www.informationisbeautiful.net)



*WHO—Tuberculosis Country Profiles*  
[www.who.int/tb](http://www.who.int/tb)



*Tuberculosis (TB) Symptoms Animation*

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### Suggestions for Further Development:

Have students research the rate of TB in their borough and neighboring borough. Then, ask that they record their information in a graphic organiser or pie chart, comparing results between both boroughs. Encourage students to research why the rates of TB cases may be higher in some boroughs than in others.



**INTRO****10**

minutes

**Introduction**

Firstly, ask *What do you know about tuberculosis?* Encourage students to share TB facts that they may already know. Then, show students *Tuberculosis (TB) Symptoms Animation*. Afterwards, have a discussion with students about TB, informing them of the symptoms, treatment, and risk factors of TB. Ensure that they know TB is curable. Distribute copies of the Fact Sheet and the Get Involved document to each student.

**ACTIVITY****15**

minutes

**Collecting Data**

Divide the class into pairs. Assign each pair two or three countries from around the world (except for the UK). Make sure that no one country is covered twice, ask students to make a note of their countries. Once each pair has been given their countries and ask students to use the Internet to see what the rate of TB is in the countries they were given. Model an example with the UK. The best place to search for this information would be on the World Health Organisation website, the link for this is in the resource section but encourage students to look for other sources via the internet. Once students have gathered sufficient information on their countries, have them discuss with their partner the best way to represent the data that they have found.

**ACTIVITY****15**

minutes

**Representing Data**

Have students work in their pairs and further develop how they will present their information to the rest of the class. Tell students that the information they have gathered is a comparison of TB rates between two different countries, and that it should be presented in an easy and manageable format. Suggest to students that they could present their information as a bar chart, a line graph or a pie chart, but encourage them to try other ways that may be more suitable. Students could also look at the website *Information is Beautiful*, which can be found in the resource section to get ideas for how to display their data. After each group has completed this, have pairs form groups of four. Then, ask that students to compare their data with the other pair. Students will be able to start understanding that certain countries have a higher risk of TB than others. Next, ask *Are you surprised by your findings? Why or why not? Why do you think rates are higher in certain countries?* Discuss with students why certain countries might have a higher risk of TB than others. Some risk factors could include difficulty in accessing healthcare and/or low-income countries.

**PLENARY****5**

minutes

**Plenary**

Have students do one of the following tasks with a partner:

- List three things they have learned today.
- Summarise today's lesson in 60 seconds.
- Write down any new words that they have learned this lesson and their definitions.

**Subject:** Music  
**Age Range:** 11–14 (Key Stage 3)  
**Lesson Time:** Approximately 50 minutes



Lesson Plan:  
**MUSIC  
AND ILLNESS**



## Aims

- To show students how music can be used to evoke strong emotions and express personal feelings.
- To teach students how the human body can be used as an instrument.

## Objectives

- Students will be able to create their own music around a theme, using their body as an instrument.
- Students will learn how to recognise the signs and symptoms of tuberculosis (TB).
- Students will learn how music can evoke a plethora of emotions.

## Curriculum Links

- Music, Unit 9A: Life Events.

## Resources

- Copies of the [Fact Sheet for students](#).
- Copies of the [Get Involved document for students](#).



*Tuberculosis (TB) Symptoms Animation*



*Frédéric Chopin, Piano Sonata No. 2 or Marche Funèbre (Funeral March)*



*Body Percussion*



*Body Percussion Fast Foot*

### Suggestions for Further Development:

Have students research and learn about junk percussion. This form of performance makes use of instruments that you can find around the home, school or office. Show students the following video titled: *Junk Percussion* [www.youtube.com](http://www.youtube.com)

Then, have students devise their own junk percussion performance in groups of four or five. Have them perform their piece of music in front of the entire school during assembly.

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**INTRO****5**  
minutes**Introduction**

Have students work individually. Play *Funeral March* by Frédéric Chopin to the class. Then, ask students to write down their personal associations to the piece of music on a sheet of paper. They can write down words, feelings, memories, or whatever comes to mind. Then, invite students to share their reflections with the rest of the class. Next, reveal the title of the piece of music to the class *Funeral March*. Discuss the title in relation to the piece of music. Ask *Did anyone associate this song with death? Why or why not?*

**DISCUSSION****5**  
minutes**Who is Frédéric Chopin?**

Ask students *Have you ever heard of Frédéric Chopin? Who was he? What did he do? Do you know anything about him or his life?* Then, share the following facts with students:

- Frédéric Chopin was a Polish composer and virtuoso pianist.
- He grew up in Warsaw.
- He is considered to be one of the greatest Romantic piano composers.
- He suffered from poor health all his life.
- He died in Paris at the age of thirty-nine from TB.

**DISCUSSION****8**  
minutes**Tuberculosis**

Show students *Tuberculosis (TB) Symptoms Animation*. Afterwards, have a discussion with students about TB, informing them of the symptoms, treatment, and risk factors of TB. Ensure that they know that TB is curable. Distribute copies of the Fact Sheet and the Get Involved document to each student.

**ACTIVITY****7**  
minutes**Body Percussion**

Introduce to students the idea of body percussion. Say *Body percussion is when you use the human body to create sounds. There are many ways to do this; some examples include clicking, clapping and stomping, as well as slapping or hitting the cheeks with an open mouth. Other sounds can be produced through breathing.* Then, if possible, show students one or both videos listed in the resource section. Afterwards, ask students *Did you like the performance? Why or why not?* Have students share their thoughts as a class.

**ACTIVITY****20**  
minutes**Body Percussion and TB**

Divide the class into groups of three or four. As a class, revise the symptoms of TB. Then, have students create a piece of music based on the symptoms of TB. They must only use their bodies to create the sounds and music. Give students sufficient time to rehearse their piece of music—that could lead to this exercise being extended into the next lesson or till the end of the class. Then, invite groups to perform their pieces in front of the rest of the class. Students will have to be creative in finding relation to some of the sounds and symptoms and should be encouraged to think abstractly. Alternatively you could create the music as a whole class.

**PLENARY****5**  
minutes**Plenary**

Have students do one of the following tasks with a partner:

- List three things they have learned today.
- Summarise today's lesson in 60 seconds.
- Write down any new words that they have learned this lesson and their definitions.

**Subject:** Physical Education  
**Age Range:** 11–14 (Key Stage 3)  
**Lesson Time:** Approximately 45 minutes



Lesson Plan:  
**BEING FIT  
AND HEALTHY**

## Aims

- To teach students the importance of being fit and healthy.

## Objectives

- Students will learn how certain diseases can restrict the working ability of the lungs.
- Students will be able to identify the symptoms of tuberculosis (TB).
- Students will learn how our breathing rate is affected by exercise.

## Curriculum Links

- Physical Education.
- Science, Unit 9B: Fit and Healthy.
- Respiration.
- Team participation.

## Resources

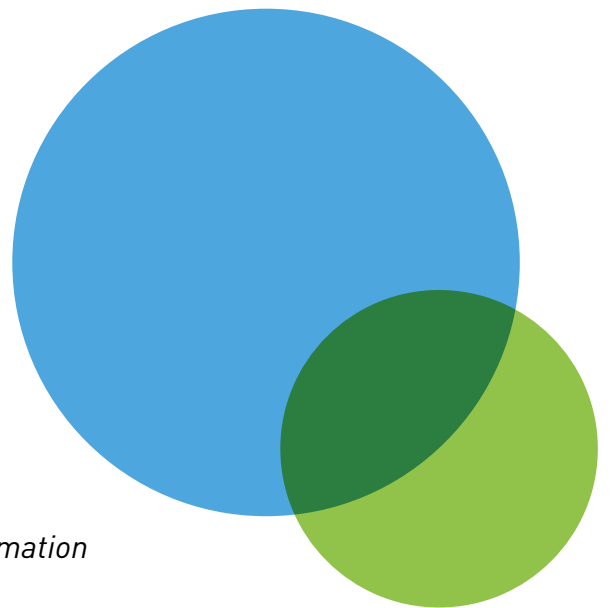
- Stopwatches.
- Copies of the [Fact Sheet for students](#).
- Copies of the [Get Involved document for students](#).



*Tuberculosis (TB) Symptoms Animation*



*NHS Choices—Tuberculosis*



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### Suggestions for Further Development:

Have students work in small groups to create a pamphlet detailing other illnesses, lifestyle choices and environmental conditions that could affect the lungs. Students should be encouraged to look at resources from the NHS and the World Health Organisation. It is important that students highlight and detail the importance of taking care of one's lungs and the best way to do that.

**INTRO****2**  
minutes**Introduction**

Start the lesson by asking students who their favourite athletes are. Ask students *Why do you like this athlete? What makes him or her special? What qualities do they have that you admire?* This serves as a brief introduction to get students engaged and thinking about fitness and health.

**ACTIVITY****5**  
minutes**Breathing Rate**

Divide the class into groups of three or four. Give each group a stopwatch, or alternatively a phone with a timer. Ask students *How many breaths do you think you take per minute when resting?* Then, have groups record their breaths per minute using the stopwatch or phone. Next, have students share their records with the rest of the class.

**ACTIVITY****15**  
minutes**Relay Races**

Ask students *Do you think your rate of breathing increases after exercise? Why? Does your rate of breathing change depending on the activity that you are doing?* Then, have students work in the same groups. Find an outside area, and have students start off with a basic warm-up, and then perform relay races. Afterwards, get students to record their breathing rate per minute to see if it has increased. Share records as a class.

**ACTIVITY****5-10**  
minutes**Diaphragmatic Breathing**

Discuss diaphragmatic breathing and its importance with students. Share a brief overview of diaphragmatic breathing: *During stressful events, your breathing rate increases. By practicing diaphragmatic breathing, you can bring your breathing rate under control and, as a result reduce your stress levels. This type of breathing is achieved by contracting the diaphragm—air enters the lungs and the belly expands. This deep breathing is marked by an expansion of the abdomen rather than the chest when breathing.* Take students through a diaphragmatic breathing exercise:

- Ask students to pay attention to their breathing pattern. Ask them to think about the speed and depth of their breaths.
- Then, ask them to slow down their rate of breathing and to concentrate on the effort that it takes.
- Next, ask students to place their hands gently on their stomach.
- Now, ask them to take a slow and deep breath through their nose, letting the air glide slowly down into their stomach and feel their hand(s) rise gently.
- Then ask them to breathe out slowly through their mouths.
- Have students perform three or four deep breaths in this way.
- Finally, ask them to breathe normally for a minute or so before trying again.

Do this exercise for three minutes. Afterwards, ask students *Was it more difficult to breathe this way? What did it feel like? Did you feel more relaxed? What can make breathing difficult?* Elicit different types of illnesses from student such as Asthma or Chronic Obstructive Pulmonary Disease (COPD).

**VIDEO**

Optional

**Illnesses and Breathing**

Ask students *What may restrict breathing?* Elicit answers such as disease or smoking. Bring the focus onto tuberculosis. Then, show the video *NHS Choices—Tuberculosis*, which shows a lung specialist discussing tuberculosis on the lungs. Ask students *What did you learn from the video? What key facts do you remember? Can you summarise the video in less than sixty seconds?*

**DISCUSSION****10**  
minutes**Tuberculosis**

Then, show students *Tuberculosis (TB) Symptoms Animation*. Afterwards, have a discussion with students about TB, informing them of the symptoms, treatment and risk factors of TB. Ensure that they know TB is curable. Distribute copies of the Fact Sheet and the Get Involved document to each student.

**PLENARY****3**  
minutes**Plenary**

Have students do one of the following tasks with a partner:

- List three things they have learned today.
- Summarise today's lesson in 60 seconds.
- Write down any new words that they have learned this lesson and their definitions.

**Subject:** PHSE  
**Age Range:** 11–14 (Key Stage 3)  
**Lesson Time:** Approximately 45 minutes



Lesson Plan:  
**SYMPTOMS OF  
TUBERCULOSIS**

## Aims

- To introduce students to the topic of tuberculosis (TB), and ensure they understand the importance of looking after their own health.

## Objectives

- Students will learn the symptoms of TB.
- Students will be able to explain how TB is spread, and the common symptoms to look out for.

## Curriculum Links

- Health: PHSE.

## Resources

- Copies of the [Fact Sheet for teachers](#).
- Copies of the [Fact Sheet for students](#).
- Copies of the [Get Involved document for students](#).



*Tuberculosis (TB) Symptoms Animation*



*World TB Day 2013 World Health Organisation*



*World TB Day Message from Dr Lucica Ditiu*



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### Suggestions for Further Development:

Have students develop a small workshop on TB. Ask students to include a presentation and a few group exercises that can be used on a variety of audiences to educate them about TB. Their target audience could be another class, a local community centre, or faith group.

**INTRO****5**  
minutes**Introduction**

Before the class, read through the Fact Sheet for teachers, and study all the key points to ensure you feel comfortable delivering a lesson on TB. Ask students *Do you know anything about the illness tuberculosis or TB as its most commonly known?* Invite a few students to share their thoughts aloud with the rest of the class.

**VIDEO****10**  
minutes**Video on Tuberculosis**

Show students *World TB Day 2013 World Health Organisation* or *World TB Day Message from Dr Lucica Ditiu*. Either of these videos will give students a brief understanding of tuberculosis, and encourage them to start thinking about tuberculosis. After watching either video, ask *What did you learn? Why is TB dangerous? What facts and figures do you remember from the video?*

**DISCUSSION****10**  
minutes**Symptoms of Tuberculosis**

Have students brainstorm the common TB symptoms that they know. Record their answers on the board. Then, underline all the correct symptoms, which might include: *coughing, chest pains, overall feeling of weakness, weight loss, fever and night sweats*. Next, show students *Tuberculosis (TB) Symptoms Animation*. Afterwards, have a discussion with students about TB, informing them of the symptoms, treatment, and risk factors of TB. Ensure that they know that TB is curable. Distribute copies of the Fact Sheet and the Get Involved document to each student.

**GROUP WORK****10**  
minutes**What Would You Do?**

Divide the class into groups of three or four. Ask *What would you do if you had TB? What would you do if you thought a family member or close friend had TB?* Have them discuss these questions in their groups, and then share their thoughts with the rest of the class. Ensure that students understand that going to the doctor is the best option.

**DISCUSSION****3**  
minutes**Tuberculosis Treatment**

Talk to students about the treatment of TB. Take them through multidrug-resistant tuberculosis (MDRTB) and extremely drug-resistant tuberculosis (XDRTB) that is detailed in the teacher's section of the resource pack. Explain to them the importance of completing treatment and following instructions from a clinician. Ensure that students understand that treatment for TB is free and easily accessible.

**GROUP WORK****7**  
minutes**TB Around the World**

Have students work in the same small groups. Ask that they discuss the impact that TB has around the world. They could use the Internet to help their research process. Ask each group to share their initial ideas with the rest of the class. This activity can be expanded into the following lesson. Students could research further into TB in different countries—they could cover TB rates, why TB rates might be higher and if treatment varies from place to place.

**PLENARY****5**  
minutes**Plenary**

Have students do one of the following tasks with a partner:

- List three things they have learned today.
- Summarise today's lesson in 60 seconds.
- Write down any new words that they have learned this lesson and their definitions.

**Subject:** Religious Education  
**Age Range:** 11–14 (Key Stage 3)  
**Lesson Time:** Approximately 50 minutes



Lesson Plan:  
**WHY DO WE SUFFER?**

## Aims

- To introduce students to the concept of human suffering in relation to tuberculosis (TB), some of its causes and how people respond in times of adversity.

## Objectives

- Students will be able to understand different types of human suffering and will be able to explain some of the causes of it, with a focus on illness.
- Students will be able to explain how different religious groups respond to human suffering.
- Students will understand the symptoms of TB and know how to seek treatment.

## Curriculum Links

- Religious Education, Unit 9C: Why Do We Suffer?

## Resources

- Computers with Internet access.
- A selection of daily newspapers.
- Copies of the [Fact Sheet for students](#).
- Copies of the [Get Involved document for students](#).



*Tuberculosis (TB) Symptoms Animation*



*Stop TB In My Lifetime*

### Suggestions for Further Development:

Have students speak to their local community group or religious/faith group about their views on human suffering. Ask students to find out their overall opinion, and if it changes from group to group, or person to person. Ask them to look at the similarities and differences between opinions. Then, have them write a reflective essay on what they found.



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## INTRO

15

minutes

### Introduction

Divide the class into groups of three or four. Then, ask each group to look at the selection of daily newspapers. Ask each group to find examples of human suffering in the world. Ask each group to classify these examples into different types of suffering. Some examples might be *natural causes*, *human causes*. Ask each group to define if the suffering is *individual*, *self-inflicted*, *medical* or *wide scale disaster*. Finally ask students to discuss if the suffering was avoidable. After the group discussions, ask a member from each group to report back to the rest of the class the main points of their discussion. Finally, tell students that they are going to focus on human suffering and specific illnesses.

## VIDEO & DISCUSSION

15

minutes

### Video on Tuberculosis

Advise students they are going to watch a video on TB. Ask students to think about how certain illnesses can cause suffering. Show students the video *Stop TB In My Lifetime*. Afterwards, ask *How did the video make you feel? What did you learn? What did you find interesting? How could you resolve the situation in the video?* Then, show students *Tuberculosis (TB) Symptoms Animation*. Afterwards, have a discussion with students about TB, informing them of the symptoms, treatment, and risk factors of TB. Ensure that they know that TB is curable. Distribute copies of the Fact Sheet and the Get Involved document to each student.

## DISCUSSION

10

minutes

### Discussion

Following the discussion around TB, bring the topic back towards general human suffering. Ask students some or all of the following questions:

- Does suffering teach you about life? If so, how?
- How can suffering be a life lesson?
- What can it teach you?
- What kind of suffering do you think is the worst kind?
- Do you think it is possible to believe in an all-loving and all-powerful God in the midst of so much suffering?
- What are some of the reasons people might give about why people suffer, or where it comes from?
- Do you think it is possible to live a life that is free from all suffering? Why?
- Can you see any positive consequences that might come from suffering?

Divide the class into pairs and ask students to discuss different religious groups and how they might respond to suffering. Ask students *Does it vary from religion to religion?* Ask each pair to devise one question about suffering that they find difficult to answer or to come to terms with, such as *Why do children suffer?* Then, have each pair share their question with the rest of the class. Guide a group discussion based on these questions. Ensure that the discussion is not focused on one religion and encourage students to think of all religions.

## DISCUSSION

7

minutes

### Healing

Ask students *How do different religious groups respond to healing? Does it vary from religion to religion? What different types of healing are there? Is it different from faith to faith?* This activity could be extended into the following lesson, or as homework as a written essay.

## PLENARY

3

minutes

### Plenary

Have students do one of the following tasks with a partner:

- List three things they have learned today.
- Summarise today's lesson in 60 seconds.
- Write down any new words that they have learned this lesson and their definitions.

**Subject:** Science  
**Age Range:** 11–14 (Key Stage 3)  
**Lesson Time:** Approximately 50 minutes

## Lesson Plan: GAS EXCHANGE SYSTEMS

### Aims

- To introduce the importance of the gas exchange system, and to look at lung illnesses, specifically Tuberculosis (TB).

### Objectives

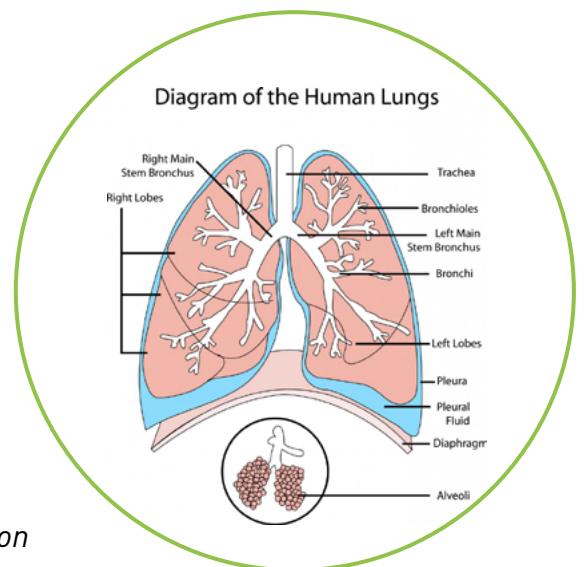
- Students will learn about the respiratory system.
- Students will learn about how some diseases can restrict the respiratory system.
- Students will identify the symptoms of TB and learn about where they can seek treatment.

### Curriculum Links

- Science, Unit 8B: Respiration.
- Science, Unit 8C Microbes and Disease.
- Science, Unit 9B Being Fit and Healthy.
- Breathing (gas exchange system).
- Respiration.
- Health.

### Resources

- Computers with Internet access.
- Copies of the [Fact Sheet for students](#).
- Copies of the [Get Involved document for students](#).



Model of lungs



*Tuberculosis (TB) Symptoms Animation*



*BBC—How do we breathe?*



*Daily Meditation*

### Suggestions for Further Development:

As an additional homework activity, have students visit the KS3 BBC Bitesize website on gas exchange systems: [www.bbc.co.uk](http://www.bbc.co.uk)

Have each student write a report about the gas exchange systems and diseases that can affect the lungs. Alternatively, have students create a model of a lung with a balloon, which can be done in the class or as homework. The following video titled *A Lung Model: A Fun, At Home Science Experiment* shows students how to make a model lung: [www.youtube.com](http://www.youtube.com)

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**INTRO****5**  
minutes**Introduction**

Ask students *What is something we do every day?* Say *It is something that we do all the time. It doesn't matter who you are with, as you are always doing this activity.* Elicit the answer *breathing*. Tell students that in this lesson we are going to be learning about gas exchange systems. Introduce the subject of breathing and learning objectives for the lesson.

**ACTIVITY****10-15**  
minutes**Meditation Exercise**

Introduce the next exercise, which will be a guided meditation. Ask students to sit on their chairs or the floor with their eyes closed. Start by playing the music video *Daily Meditation*. Have students count their breaths for one minute. Then, ask that they concentrate on what parts of their body are moving as they breathe (two minutes). Then, ask them to concentrate on the movement in their chest and stomach area (two minutes). Then, on the sensation that the air makes as it passes through their nostrils (two minutes). After the meditation, ask students *What did you feel? Did you have trouble concentrating? How did you become more aware of your breath? Did your breathing change at all? Do you feel more relaxed?*

**ACTIVITY****5**  
minutes**What are the Lungs?**

Draw a model of the lungs on the board. Then, ask students to label the parts of the lung with a brief explanation of each part. An example of a model lung can be found on the previous page.

**DISCUSSION****5**  
minutes**Discussion**

Discuss with students how breathing works and the respiratory tree. Share the following information with students:

- Intercostal muscles contract pushing the ribs apart.
- Diaphragm contracts causing the chest space to expand.
- Air pressure drops and the air is pushed in from outside.
- Intercostal muscles and diaphragm relax.
- The weight of the rib cage pushes the air out.

**VIDEO****5**  
minutes**Video Activity**

Show the video *How do we breathe?* After watching this, ask students *What did you learn? What does the thorax contain? What is the trachea also known as? How is air drawn in?* Guide a class discussion with these questions.

**DISCUSSION****10**  
minutes**Lung, Illness and Tuberculosis**

Ask students *What might prevent your lungs from working at their full potential?* Elicit possible responses such as *illness, smoking and air pollution*. Then, ask students *What kinds of illnesses would stop your lungs from working?* Elicit possible answers such as chronic obstructive pulmonary disease (COPD) and *tuberculosis (TB)*. Lead the discussion onto the topic of TB. Discuss with students the key facts and symptoms of TB. Afterwards, show students *Tuberculosis (TB) Symptoms Animation*. Afterwards, have a discussion with students about TB, informing them of the symptoms, treatment, and risk factors of TB. Ensure that they know that TB is curable. Distribute copies of the Fact Sheet and the Get Involved document to each student.

**PLENARY****5**  
minutes**Plenary**

Have students do one of the following tasks with a partner:

- List three things they have learned today.
- Summarise today's lesson in 60 seconds.
- Write down any new words that they have learned this lesson and their definitions.

**Subject:** Science  
**Age Range:** 11–14 (Key Stage 3)  
**Lesson Time:** Approximately 40 minutes



Lesson Plan:  
**HOW ARE ILLNESSES SPREAD?**

## Aims

- To introduce to students what microorganisms are and help them understand how some can be harmful.
- To introduce to students how some illnesses can be spread through coughing and sneezing.

## Objectives

- Students will be able to explain how tuberculosis (TB) is spread and the common symptoms to look out for.
- Students will be able to differentiate between bacteria, fungi and viruses.

## Curriculum Links

- Science, Unit 7A: Cells.
- Science, Unit 8B: Respiration.
- Science, Unit 8C: Microbes and Disease.
- Cells and organisation.
- Health.
- Respiration.

## Resources

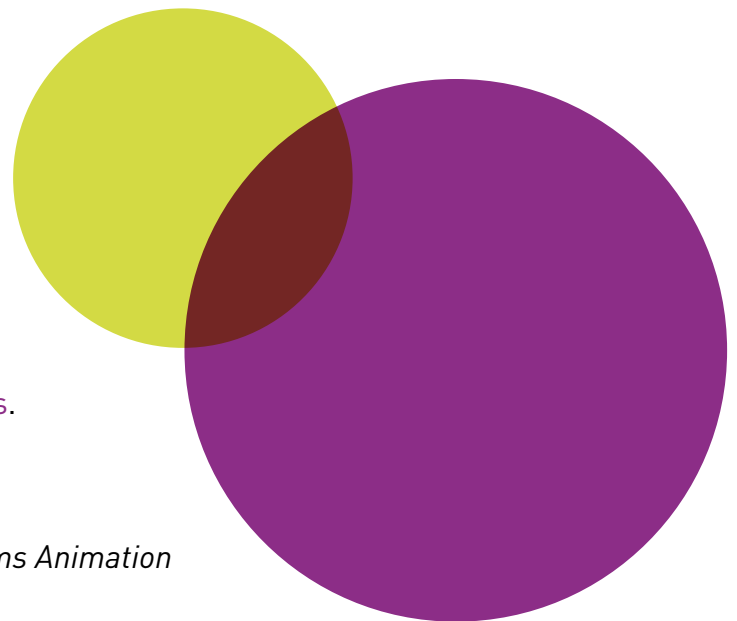
- Computers with Internet access.
- Copies of the [Fact Sheet for students](#).
- Copies of the [Get Involved document for students](#).
- Tubes of glitter and plastic bags.



*Tuberculosis (TB) Symptoms Animation*



*Coughs and Sneezes Spread Diseases*



### Suggestions for Further Development:

Have students create a poster detailing how illnesses such as TB are spread and the importance of using a tissue when you cough and sneeze. For inspiration in developing their poster they could look at the CATCH IT, BIN IT, KILL IT campaign and generate ideas to target different audiences. Once the posters have been developed, display them in prominent areas where students and teachers in different classes can see them.

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**INTRO****10**  
minutes**Introduction**

Ask students what they know about microorganisms. Encourage them to share as much information as possible. Ask *What do you know about them? Why are they important? Do you know any names of any microorganisms? What functions do they have?* Draw three columns on the board titled: *Viruses, Bacteria and Fungi*. Then, call out the following list, and ask students to classify each illness into its appropriate column.

- Tuberculosis (bacteria)
- Salmonella (bacteria)
- Whooping cough (bacteria)
- Athletes foot (fungi)
- Thrush (fungi)
- Yeast (fungi)
- Measles (virus)
- HIV (virus)

**DISCUSSION****5**  
minutes**How are Illnesses Spread?**

Divide the class into groups of three or four. Ask students *How do microorganisms spread? Do all micro-organisms spread the same way?* Have them discuss these questions within their group. Then, ask one group member to share their answers with the rest of the class. Tell students that they are going to focus on illnesses that are spread through coughing and sneezing.

**ACTIVITY****10**  
minutes**Glitter Activity**

This activity is to show how a contagious illness can be passed from one person to the next. Divide the class into groups of three or four. Distribute a tube of glitter and plastic bag to each group. Then, guide students through the following steps:

- Step One: Have students put one teaspoon of glitter in a plastic bag.
- Step Two: Ask each group to form a line.
- Step Three: Have the first person in the line put his or her hand in the bag, so that it gets coated with glitter.
- Step Four: Then, have that student shake hands with the person behind them. Next, ask that this person shake hands with the person behind them, and so on, until they reach the end of the line.
- Step Five: Afterwards, everyone in the group should examine their hands for glitter.

At the end of the activity, ask students *Are you surprised at how easily illnesses can spread?* Elicit some discussion around this, and ensure that students know how easy contagious illnesses can spread. Illustrate to students that the point of this exercise is to show how some illnesses can spread by not washing your hands. TB is spread through airborne transmission and a clear definition should be made. After the discussion tell students *While some diseases may share the same way of transmission, such as airborne transmission, some illnesses can be a bit harder to catch.* Ask students *Which do you think is easier to catch: the flu or TB?* Elicit the correct answer *the flu*. Explain to students that this is because the droplets expelled when sneezing and coughing are lighter and can travel further. It is important to highlight to students that you need about eight hours cumulative exposure to TB to be at risk.

**DISCUSSION****5**  
minutes**Discussion on Tuberculosis**

Show students *Tuberculosis (TB) Symptoms Animation*. Afterwards, have a discussion with students about TB, informing them of the symptoms, treatment and risk factors of TB. Ensure that they know TB is curable. Distribute copies of the Fact Sheet and the Get Involved document to each student.

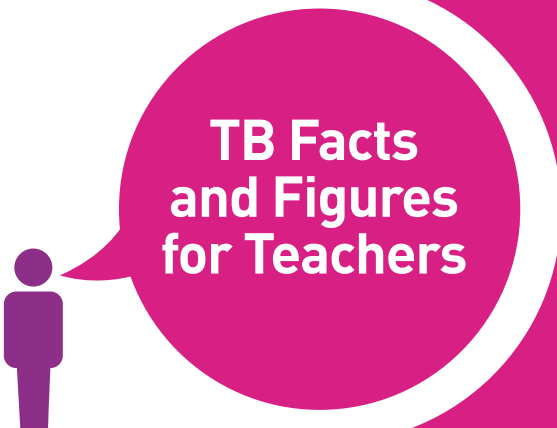
**VIDEO****5**  
minutes**Coughs and Sneezes Spreads Diseases**

Watch the video *Coughs and Sneezes Spread Diseases*. In 1948, the UK government made this video with the idea to encourage people to protect themselves and others from illnesses. After watching the video ask students *Did you enjoy the video? What is the main idea presented in the video? Do you think the message is clear? What did you like about the video and why? What didn't you like and why?*

**PLENARY****5**  
minutes**Plenary**

Have students do one of the following tasks with a partner:

- List three things they have learned today.
- Summarise today's lesson in 60 seconds.
- Write down any new words that they have learned this lesson and their definitions.



## TB Facts and Figures for Teachers

World TB Day (March 24th)

### What is Tuberculosis?

Tuberculosis is often called TB for short. TB is a serious but treatable infection, caused by the bacterium *Mycobacterium tuberculosis*. TB is primarily a disease of the lungs but it can infect any part of the body. When TB is in the lungs it is called pulmonary TB. TB can also infect other parts of the body such as the brain or spine—this is referred to as non-pulmonary TB. A person with TB can die if they do not get treatment.

### Latent TB

A person with latent TB infection has TB in their bodies, but they are not ill because the germs are not active. People with latent TB will not have symptoms, and cannot spread the disease to others. However, it is possible that they may get active TB in the future.

### Active TB

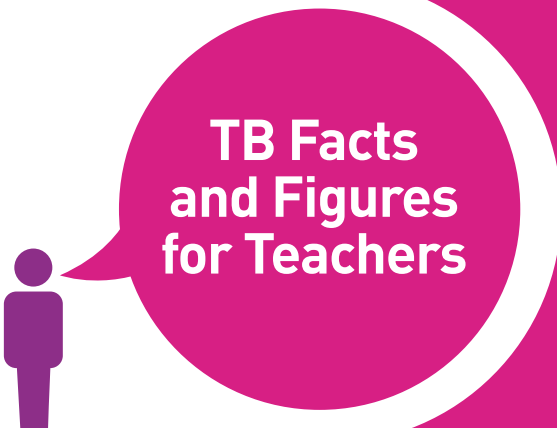
A person with active TB is ill from the TB germs. The bacteria are multiplying and destroying tissue in their body. They will usually have symptoms of TB illness. If someone has TB disease of the lungs they are capable of spreading germs to others. Until someone with infectious active TB in the lungs and throat has received two weeks of treatment, they may be able to pass it on to others when they cough or sneeze.

### TB Around the World

It is estimated that 9 million people will become ill with TB each year and over a million and a half people will die from the illness. In a single day, 5000 people die from TB.



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## TB Facts and Figures for Teachers

World TB Day (March 24th)

### TB in the UK

TB has always been found in the UK, and before the introduction of antibiotics it was a very serious problem. Today, the UK has some of the worst rates of TB infection. In 2011 there were 9042 new cases of TB in the UK and 38% of these cases were in London.

London has a very high rate of TB and in the past few years there has been an increase in TB rates and cases. Newham and Brent have some of the highest rates of TB in the whole of the UK and there were 312 cases of TB in Brent in 2011.

It's important that people are aware that TB is treatable. We need to increase awareness of TB so that people at risk, and particularly people from high-risk countries, know how to identify symptoms of TB and seek appropriate treatment.

Parts of the world that have high rates of TB include:

- Africa—particularly sub-Saharan Africa (all the African countries south of the Sahara desert) and West Africa, including Nigeria and South Africa.
- Southeast Asia—including India, Pakistan, Indonesia and Bangladesh.
- Russia.
- China.
- South America.
- The western Pacific region (to the west of the Pacific Ocean) – including Vietnam and Cambodia.

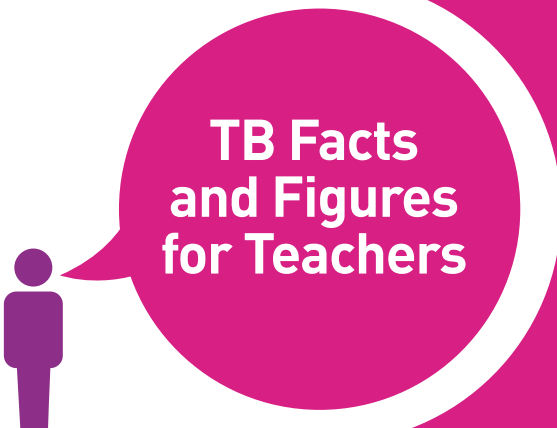
### How is TB Spread?

TB is spread from person to person through the air. When a person with infectious TB coughs or sneezes they emit small droplets with the germs into the air. These germs can stay in the air for several hours, depending on the environment. People who breathe in the air containing these TB germs can become infected.

People with latent TB infection have no symptoms and are not infectious. TB is not spread through shared surfaces, shaking someone's hand, sharing toothbrushes, kissing, or sharing cups and cutlery. Good hygiene, such as covering your mouth when you cough or using a tissue when you sneeze can help stop the transmission of TB.



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## TB Facts and Figures for Teachers

World TB Day (March 24th)

### Symptoms of TB

The symptoms of pulmonary TB are:

- A cough that lasts for more than 2–3 weeks.
- Coughing up blood or sputum.
- Weakness or extreme tiredness.
- Loss of appetite.
- Weight loss.
- Night sweats.
- Fever.
- Pain in the chest.

IMPORTANT—it is important that you see a GP if you have a cough that lasts more than 3 weeks or if you cough up blood.

### Testing for TB

#### How Do You Get Tested for TB?

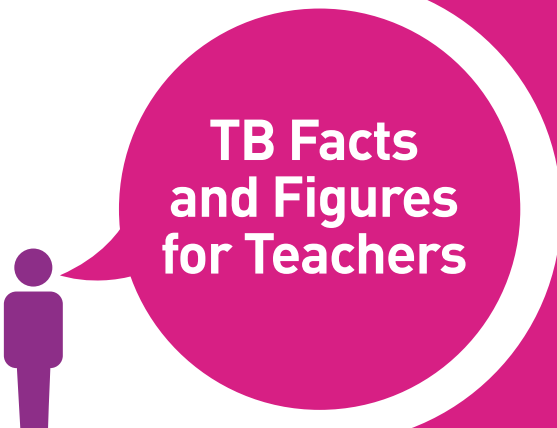
There are several ways to be tested for TB, depending on the type of TB suspected. They may be one or some of the following:

- A chest X-ray.
- Mantoux test—this involves injecting a substance called tuberculin into the skin of the arm and usually afterwards a red bump will develop between 48–78 hours. It is necessary to return to a clinician after this test to get it checked.
- A sample of mucus and phlegm which will be checked under a microscope.
- A computerised tomography (CT) scan.
- A magnetic resonance imaging (MRI) scan.
- An ultrasound scan.
- Blood tests.
- Urine tests.
- A biopsy.
- Lumbar puncture—this involves taking a small sample from the fluid at the base of your spine.
- Interferon gamma release assay (IGRA)—a newer type of blood test for TB.



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## TB Facts and Figures for Teachers

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### **TB Treatment**

Tuberculosis is a serious but curable disease and can be fatal if left untreated. Treatment of TB usually involves a combination of three to four different antibiotics given over a six to nine month period although in some cases this may be longer. For most people hospital admission is not necessary.

It is necessary to take all of the medicine as and when it is prescribed. If treatment is stopped too soon, it is possible to become ill again; also if the drugs are not taken correctly, the germs that are still alive may become resistant to those drugs. In rare cases, TB can be fatal, even with treatment. Death can occur if the lungs become too damaged to work properly.

### **Latent TB**

Latent TB can also be treated with antibiotics for three to six months. Treatment is not recommended for people who have latent tuberculosis and are over 35, as this medication suppresses the immune system.

### **Antibiotic-resistant TB**

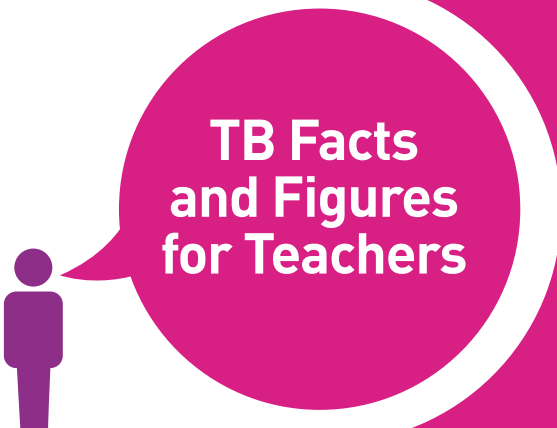
Like most bacteria, bacteria that cause tuberculosis can develop resistance to antibiotics. This means the medicines used can no longer kill the bacteria they are supposed to fight. Generally TB that develops a resistance to one type of antibiotic will not cause a concern as there are several alternatives that can be used. However, in a number of cases we can see the following:

- TB develops a resistance to two antibiotics—this is known as multidrug-resistant tuberculosis (MDR-TB).
- TB develops a resistance to three or more antibiotics—this is known as extensively drug-resistant tuberculosis (XDR-TB).

Both MDR-TB and XDR-TB will usually require treatment for at least 18 months using a combination of different antibiotics.



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## TB Facts and Figures for Teachers

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### TB Risk Factors

One of the most important risk factors for contracting TB is spending sufficient time with someone who has an infectious form of the illness. It may take up to eight hours or more of exposure for sufficient numbers of the bacteria to build up in the body. Other risk factors include:

- HIV.
- Living in a country or city where TB is common.
- TB in the UK is more common in the bigger cities.
- Working in an environment where TB disease is common, such as a prison or a homeless shelter.
- Living in overcrowded conditions such as hostels, prisons and student halls.
- Using illegal drugs.
- Living in damp, dark and dusty accommodation.
- Having a weak immune system, which could be from certain prescription drugs, being pregnant, being elderly, or a poor diet.

### Immunisation

#### What is Bacille Calmette–Guèrin (BCG)?

The BCG immunisation is not given as part of the routine NHS schedule. It is given if a baby is thought to have an increased chance of coming in contact with TB. The BCG immunisation contains a weak strain of tuberculosis bacterium. It has been altered so it will not cause a TB infection, but will encourage your immune system to build a resistance to the disease. The immunisation protects up to 80% of people who have it for around 15 years. It is not completely possible to control the disease by using the immunisation as people may still get ill.

### Good News!

Over the past 15 years an estimated 41 million people have been successfully treated and an estimated 7 million lives have been saved through the Stop TB strategy, backed by the World Health Organisation.



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## TB Facts and Figures for Students

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### What is Tuberculosis?

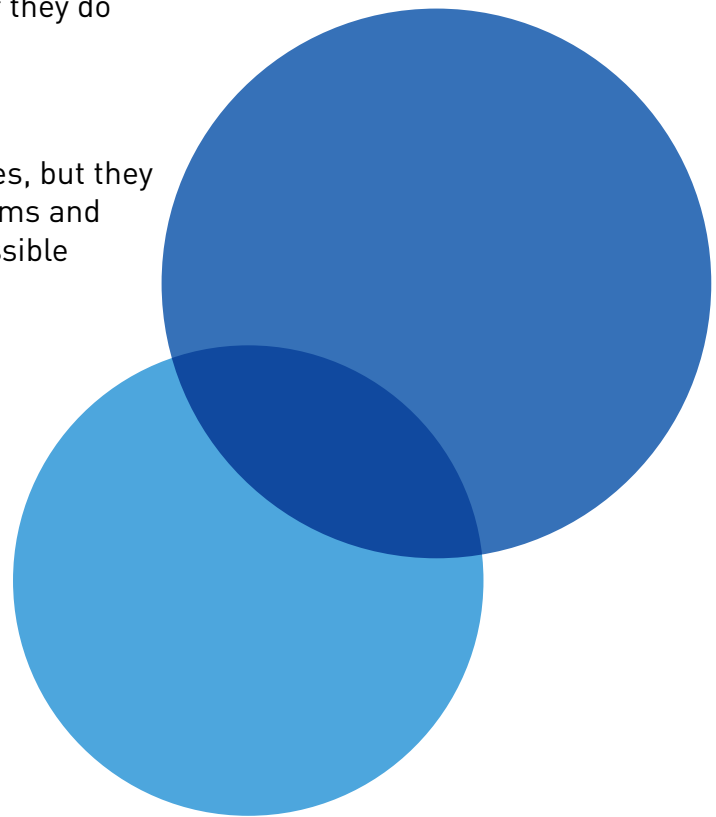
Tuberculosis is often called TB for short. TB is a serious but treatable infection, caused by the bacterium *Mycobacterium tuberculosis*. TB is primarily a disease of the lungs but it can infect any part of the body. A person with TB can die if they do not get treatment.

### What is Latent TB?

A person with latent TB infection has TB in their bodies, but they are not ill. People with latent TB will not have symptoms and cannot spread the illness to others. However, it is possible that they may get active TB in the future.

### What is Active TB?

A person with active TB is ill from TB. The bacteria are multiplying and destroying tissue in their body. They will usually have symptoms of TB disease. Until someone with infectious active TB in the lungs and throat has received two weeks of treatment, they will be able to pass it on to others when they cough or sneeze.



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# TB Facts and Figures for Students

World TB Day (March 24th)



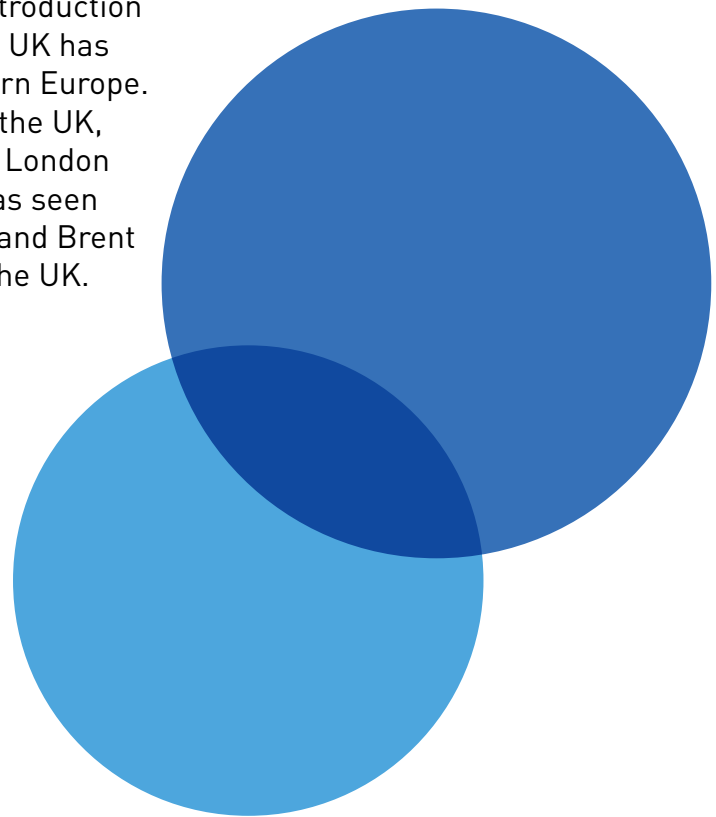
## Facts About TB

It is estimated that 9 million people will become ill with TB each year and over a million and a half people will die from the disease. In a single day, 5000 people die from TB.

TB has always been found in the UK and before the introduction of antibiotics it was a very serious problem. Today the UK has some of the worst rates of TB infection in all of Western Europe. In 2011 there were 9042 new cases of tuberculosis in the UK, with London counting for about 38% of all new cases. London has a very high rate of TB and in the past few years has seen an increase in rates and numbers of cases. Newham and Brent have some of the highest rates of TB in the whole of the UK.

## How is TB Spread?

TB is spread from person to person through the air. When a person with infectious TB coughs or sneezes they propel small droplets with the germs into the air. These germs can stay in the air for several hours, depending on the environment. People who breathe in the air containing these TB germs can become infected. People with latent TB infection have no symptoms and are not infectious. TB is not spread through shared surfaces, shaking someone's hand, sharing toothbrushes, kissing or sharing cups and cutlery. Good hygiene, such as covering your mouth when you cough or using a tissue when you sneeze can help stop the transmission of TB.



## TB Facts and Figures for Students

World TB Day (March 24th)



### What are the Symptoms of TB?

The symptoms of pulmonary TB are as follows:

- A cough that lasts for more than 2-3 weeks.
- Coughing up blood or sputum.
- Weakness or extreme tiredness.
- Loss of appetite.
- Weight loss.
- Night sweats.
- Fever.
- Pain in the chest.

The symptoms of TB can sometimes be a little unclear and can often be confused with other illnesses, depending on which part of the body is affected by TB.

Symptoms can vary depending on which part of the body is affected. For example, a cough is a common symptom of TB in the lungs, but someone with TB in the kidneys may have backache.

The coughing up of blood is often associated with TB: it indicates late stage pulmonary TB when blood vessels in the lungs have been damaged.

**IMPORTANT**—You should always see a GP if you have a cough that lasts more than three weeks or if you cough up blood.

### Good News!

Over the past 15 years an estimated 41 million people have been successfully treated and an estimated 7 million lives have been saved through the Stop TB strategy, backed by the World Health Organisation.

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## Getting Involved... Teachers

Thank you! By using this pack you have already made a huge contribution to the fight against TB, but why stop there? There are many more things you can do to help make a difference in the fight against TB in your local community, the UK and the world.

### **Make TB Alert Your Charity of the Year**

A great way to help fight TB is to adopt TB Alert as your school's Charity of the Year or Charity of the Term, raising funds and awareness of the TB Alert over the whole period. With a longer term commitment, children are more likely to gain an understanding of why TB Alert needs to raise money to help people with TB.

### **What Does This Involve?**

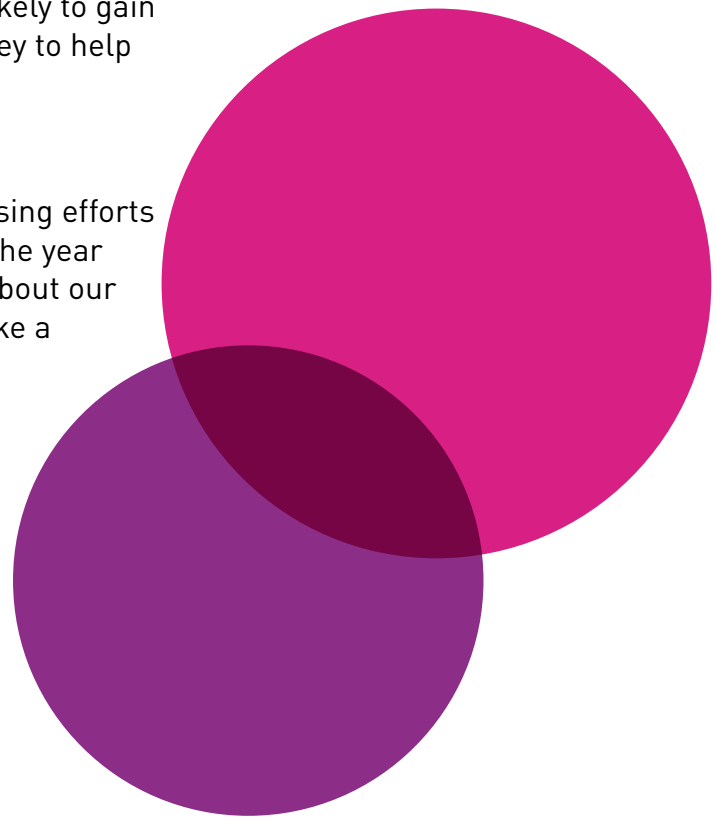
Charity of the Year or Term helps to focus the fundraising efforts of a school to fundraise only for TB Alert throughout the year or term. Pupils generally come to understand more about our goals, work and how their fundraising efforts can make a real difference.

Your fundraising events could be spread over the whole year. This gives you time to plan ahead and work around your school timetable and holidays.

### **What Do I Do Next?**

If you would like to make the TB Alert your Charity of the Year or Term, please contact our fundraising department at [fundraising@tbalert.org](mailto:fundraising@tbalert.org) or call **01273 234029** for your **free fundraising pack**.

For more details about TB Alert [www.tbalert.org](http://www.tbalert.org)





## Getting Involved... Students

I hope you enjoyed learning about TB. You can get involved with the fight against TB by asking your teacher or headteacher to make **TB Alert** your schools **Charity of the Year or term**. Raising money for TB Alert is easy. Your teacher can request a fundraising pack from TB Alert and you can help people like Jarvis.

### Jarvis' Story

Jarvis was 11 years old when he started experiencing chest pains, night sweats, high temperatures, loss of appetite and breathlessness. These are all the symptoms of TB, yet it took nine months for Jarvis to be diagnosed and receive treatment.

Jarvis was determined to continue playing football, but when doctors discovered that he had a hole in one of his lungs he had to stop. Still Jarvis was determined to help other people TB.

Jarvis said, *"When I realised there are children in Africa and Asia who cannot get access to the same life-saving treatment I needed, I realised I had to do something to help TB Alert's work worldwide as well as in the UK. We want people to be aware of signs and symptoms of the disease so that people are diagnosed quickly."*

Whilst recovering from TB, Jarvis decided to do a sponsored fun run for TB Alert. He said, *"It was hard taking all the medicines but when they were reduced I found it easier. I felt guilty when my friends had to undergo tests for TB but they have been fantastic, sending me get well messages and chatting to me about TB on MSN"*.



### What Can I Do to Help Stop TB?

Raising funds for TB Alert will help us to help stop TB across the world. You can hold many different types of fundraising events with your friends at school or outside of school. If you plan to raise funds talk to your teachers, parents/guardians and family about what you would like to do.

### What Do I Do Next?

Ask your teacher to make the TB Alert your Charity of the Year or Term and they can request a free fundraising pack from our fundraising department at [fundraising@tbalert.org](mailto:fundraising@tbalert.org) or call **01273 234029**.

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# Thank You

I would like to say a big thank you to the following people who have helped in the development of this resource. Each of you has provided me with invaluable guidance and support in the development of this resource.

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Lewis Smith  
Project Manager



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