Curriculum Links

Safety issues	
Potential sensitivity relating to death of a relative	
KS3 Science Programme of Study (DfE National Curriculum PoS)	**KS4 GCSE Science Programme of Study (DfE National Curriculum PoS)**
Scientific attitudes • pay attention to objectivity and concern for accuracy, precision, repeatability and reproducibility • understand that scientific methods and theories develop as earlier explanations are modified to take account of new evidence and ideas, together with the importance of publishing results and peer review • evaluate risks **Experimental skills and investigations** • ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experience **Analysis and evaluation** • interpret observations and data, including identifying patterns and using observations, measurements and data to draw conclusions • identify further questions arising from results	**Development of Scientific thinking** • evaluating risks both in practical science and the wider social context, including perception of risk **Experimental skills and strategies** • use scientific theories and explanations to develop hypotheses **Analysis and evaluation** • translating data from one form to another • interpret observations and data including identifying patterns and trends, make inferences and draw conclusions • being objective, evaluating data in terms of accuracy. precision, repeatability and reproducibility and identifying potential sources of random and systematic error
KS3 Biology subject content (DfE National Curriculum PoS)	**KS3 Biology subject content (DfE National Curriculum PoS)**
Nutrition and digestion • content of a healthy human diet: carbohydrates, lipids (fats and oils), proteins, vitamins, dietary fibre and water, and why each is needed • the impact of exercise, asthma and smoking on the human gas exchange **Genetics and evolution; inheritance, chromosomes, DNA and genes** • heredity as the process by which genetic information is transmitted from one generation to the next	**Health, disease and the development of medicines** • the relationship between health and disease • the impact of lifestyle on the incidence of non-communicable diseases
	KS4 GCSE Food preparation and nutrition (DfE National Curriculum PoS)
	Nutrition • major diet related health risks including obesity, cardiovascular, bone health, dental health, iron deficiency anaemia, diabetes
KS3 Physical Education (DfE National Curriculum PoS)	**KS4 Physical Education (DfE National Curriculum PoS)**
• they should develop the confidence and interest to get involved in exercise, sports and activities out of school and in later life, and understand and apply the long term health benefits of physical activity	• they should get involved in a range of activities that develops personal fitness and promotes an active, healthy lifestyle

Curriculum Links

PSHE (DfE National Curriculum PoS)
Physical health and fitness • the risks associated with an inactive lifestyle (including obesity) • the positive associations between physical activity and promotion of mental wellbeing, including as an approach to combat stress • the characteristics and evidence of what constitutes a healthy lifestyle, maintaining a healthy weight, including the links between an inactive lifestyle and ill-health, including cancer and cardio-vascular ill-health **Healthy eating** • the characteristics of a poor diet and risks associated with unhealthy eating (including, for example, obesity and tooth decay) and other behaviours (e.g. the impact of alcohol on diet or health) **Drugs, alcohol and tobacco** • the physical and psychological risks associated with alcohol consumption and what constitutes low risk alcohol consumption in adulthood • the physical and psychological consequences of addiction, including alcohol dependency • the facts about the harms from smoking tobacco (particularly the link to lung cancer), the benefits of quitting and how to access support to do so
Behaviour Change Theory links
BCT 1.1 Goal setting (behaviour) BCT 1.8 Behavioural contract BCT 1.9 Commitment BCT 5.5 Anticipated regret BCT 9.3 Comparative imagining of future outcomes

Lesson 4

Assessing Health

Objectives

At the end of this lesson students should be able to:

- Identify risk factors that can affect our health
- Analyse evidence from different sources
- Draw conclusions from the evidence

Hook

Spot the health risks

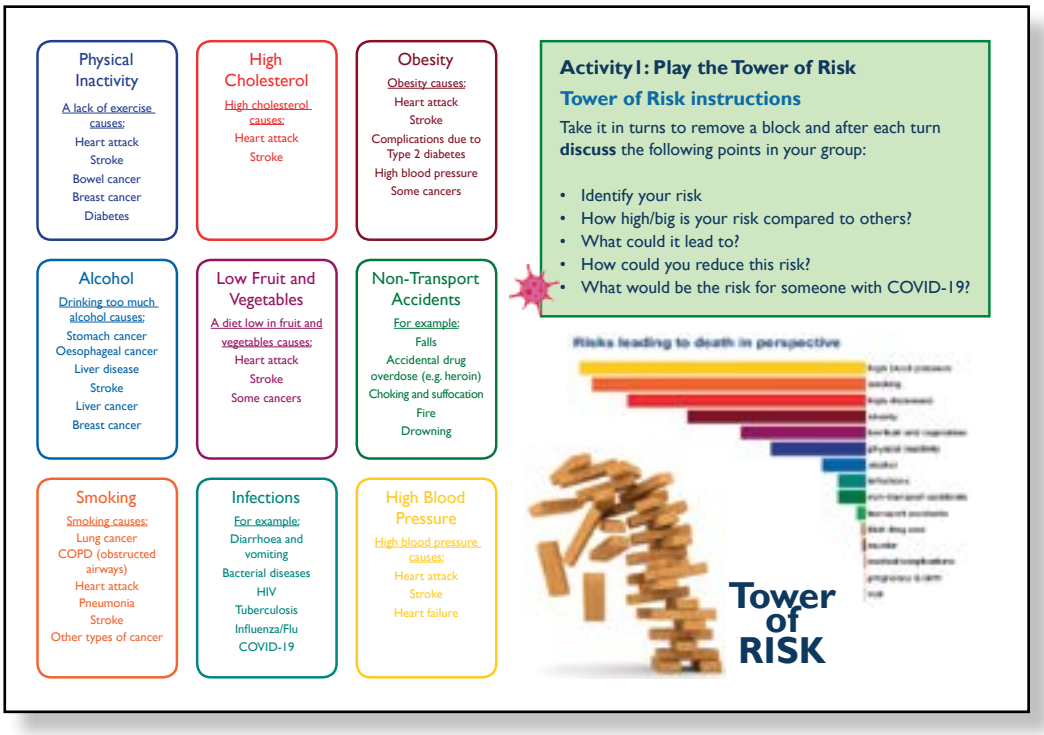
Show the pictures of the livers and lungs.

'What are the differences?'

'What do you think may have caused these differences?' 'How do you think the individuals' health was affected?'

Activities:

!!This lesson may be sensitive for some students, i.e. loosing a grandparent and you may want to discuss these with students at the start, see 'Discussing sensitive issues' in the Teaching Tips on p.12. Introduce the lesson and share the objectives with the students. Individuals record how confident they are for each of the objectives at the start of the lesson.



Starter

Activity 1: Tower of Risk

Time:15 minutes

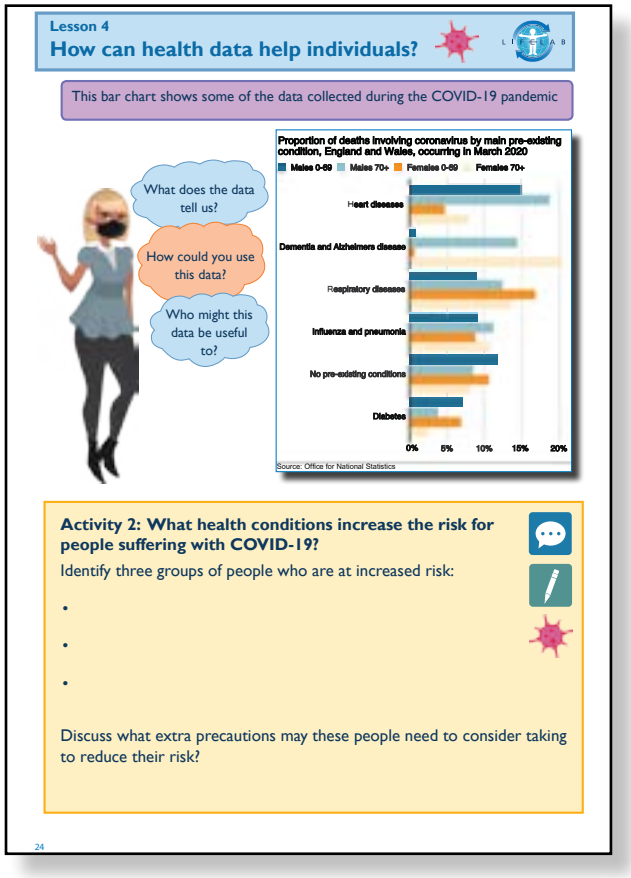
Discuss and clarify a definition for risk, ***'What do we mean by risk?'***

Students play 'Tower of Risk' using the play instructions; in small groups they take it in turns to remove a block. At each turn they identify the 'risk' they have removed to the rest of the group and discuss ***'How big a risk is it? What could it lead to? How could you reduce the risk? What changes could you make to your lifestyle? How would COVID-19 affect you?'*** Key point is that a healthy lifestyle will make all bodily functions work better, including immunity, helping you to live longer. Eating a healthy diet, keeping physically active, not smoking, limiting alcohol intake, and getting enough relaxation and sleep are key components of a healthy lifestyle.

The player who makes the tower fall is dead and needs to inform the rest of the group which block/risk led to their cause of death.

Note the number of blocks for each risk have been calculated so that they are in proportion to NHS statistical data on risks linked with causes of death in the UK.

After playing the game the whole class discuss - ***'Which risk made tower fall most often? Is this what you expected? Explain why'*** Highlight the accumulation of risk factors during a "life".



Main

Activity 2: What health conditions increase the risk for people suffering with COVID-19?

Time: 5 minutes

Using the data sources on the PowerPoint, discuss with students ***'What does the data tell us? How could you use this data? Who might find this data to be useful? What extra precautions may these people need to consider taking to reduce their risk?'*** Students identify three groups in their booklet.

Identifying groups at heightened risk of severe illness: Individuals aged 70 and over; individuals with one or more underlying health conditions including lung conditions such as asthma and bronchitis, diabetes, heart disease, liver disease, kidney disease; individuals who are obese; individuals receiving medication or treatment that can affect the immune system including chemotherapy and immunotherapy; men are at a higher risk than women; individuals from Black, Asian and Minority Ethnic backgrounds are at higher risk than those from other ethnic groups.

Note that many of these conditions are linked to lifestyle and therefore we have some control and can reduce our individual risk by making the right health choices. ***'What positive lifestyle choices could you make to reduce your risk?' 'What positive affects will these have on your health?'***

Activity 3: Researching Chris's health

Time: 30 minutes

Introduce Chris and his family to the students and have a look at his family tree and his Grandad's death certificate. ***'What does the death certificate tell us? Could his Grandad have done anything to prevent his death at such a relatively young age?'***

The main purpose of this activity is for students to consider all the information provided about Chris and based on their knowledge, understanding and views about what being healthy means, answer the following:

- ***How healthy is Chris?***
- ***What are the health risks that Chris may have to face?***

Ask the students ***'What would a scientist do if they had to answer these questions? How are we going to approach this problem like scientists do? What data would the scientists collect to be able to make informed evidence-based conclusions?'***

Activity 3: Researching Chris's health *continued*

There are three main sets of evidence which need to be considered, these are Chris's family background, current lifestyle and early development. Students should work in groups of 4/5 to explore one of these three factors using the sources of evidence supplied in the teacher's resource pack:

Group A - look into Chris's family background and medical history, using a family tree, Grandad's death certificate and set of family cards, with information about Chris's relatives and friends.

Group B - look into Chris's current lifestyle, using Chris's food diary, sleep report, activity log, Eatwell Guide, Mum's weekly shopping list and fridge photo, transcript of Chris's TeC-19 focus group.

Group C - look into Chris's early development and childhood, using midwifery notes including mother's lifestyle and notes from baby book which include: growth chart, birth weight, and breast/bottle feeding.
N.B. This activity would suit an extension group.

Each group needs to summarise:

- ***Which pieces of evidence are most helpful?***
- ***Why are they helpful, what does the evidence tell you?***
- ***What are the health risks Chris may face in the future?***
- ***Who in Chris's family is most at risk from COVID-19 based on their health data?***

Activity 4: Experts sharing findings/collaborative learning **Time: 10 minutes**

Each group cascades their information to the other two groups, ensuring that all groups have had a chance to listen to information and ideas from all three sources of evidence.
Finally the groups complete the summary sheet to record their findings.
(e.g. Grp A splits up and joins with grps B & C, to talk to them about what they have found out about Chris. After a 5-minute discussion grp A return and grp B and then finally grp C splits, repeating the process each time).

Plenary

Time: 5 minutes

Preparation for the LifeLab activity day. Ask students to consider what additional information they need to know about Chris, discuss ***'What other information would you like to know about Chris? What things could you measure or test that would help decide how healthy Chris is?'***
Students record the additional information they want to collect from Chris on the summary sheet, to refer to on their visit.
Students refer back to the lesson objectives and complete the assessment for learning activity in the orange boxes, feedback and share an interesting fact they have found out from the lesson.

Resources

- Lesson 4 PowerPoint slides
- Student booklet pages 22-28
- Tower of risk game x4 sets
- Family history cards and Family data sheet
- Food diary, sleep report, Eatwell Guide, fridge photo, shopping list
- Midwifery notes and baby book

Keywords

- evidence
- midwife
- lifestyle
- risk factor