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| **Updated Overview of LifeLab ‘Science for Health Literacy’ Module 2020/21**  All lessons have been initially designed for delivery in school, face to face with a teacher, but a remote version has also been developed for students working independently at home. | | | | | |
| **Lesson** | **Lesson Title**  **& Objectives** | **Lesson brief outline** | **Core Activities** | **Resources** | **Curriculum links and cross curricular themes** |
| **1** | **How Scientists work**  **Recognise the role scientists played in the COVID-19 pandemic**  **Describe how scientists conduct trials to develop new treatments**  **Identify the advantages of taking part in scientific research** | Defining health -  What role does science play in health?  Introduce the process of clinical trials/vaccines  Highlight how PPI is useful and how young people can play a part | **Hook:** Students watch a short clip from the film Contagion, which is over 10years old. *‘How many terms do they recognise?’* ***‘****Could we have been better prepared?’*  **Beliefs axis**: discussion tool exploring their ideas of current health issues:  *‘All unhealthy food outlets should be banned within one mile of schools.’*  *‘It is suggested the production of meat is causing more greenhouse gases which harm our planet. Meat eating is killing our planet.’*  *‘The COVID-19 vaccine should be made compulsory for everyone.’*  **What does ‘Health’ mean?**- Exploring what Health means to them and looking at the WHO definition of Health  **Intro to COVID-19*:*** *‘What is COVID-19?’* covering the origin as a zoonotic disease, communicable disease and transmission.  **Timeline for the first 12months of the COVID-19 pandemic:** highlighting examples where science and research were involved, able to explore using the power point to click onto the links and videos.  **Science and new treatments - Research for a vaccine:**  Meet two people who have been involved, video clip of a trial participant and trial manager – brief explanation of how a trial is conducted, phases etc. and highlight how it has been able to develop the COVID-19 vaccine in such a short amount of time.  **Who would be a suitable candidate to take part in the trial?** Share the criteria and requirements needed for participants volunteering for the COVID-19 vaccine trial. Look at profiles of potential participants and using checklist discuss/role play who would/not be suitable and why? E.g. BMI, pregnant, age, hates needles, just had a recent op/illness/blood transfusion, diabetic, heart condition etc...  NB- sensitive issues of selection for trials- perhaps related to family members etc.  Introduce Patient and Public Involvement and discuss how YP can play a part.  **Homework:** record/photo food for eaten for one day and fridge photo | * Teachers’ PowerPoint * Lesson plan * Student booklet * Remote lesson on Articulate * Clip from Contagion film * Video clips of   + Dr Alistair Munro   [https://bit.ly/MtSAlasdairMunro](https://eur03.safelinks.protection.outlook.com/?url=https%3A%2F%2Fbit.ly%2FMtSAlasdairMunro&data=01%7C01%7CL.J.Bagust%40soton.ac.uk%7Cb517d8b6787149cf63e208d866c34963%7C4a5378f929f44d3ebe89669d03ada9d8%7C0&sdata=moNS1o2vA7PEa%2BtsQmgkeb3v1u%2BZ2WwB%2BS5q2VS%2Bgvw%3D&reserved=0)   * + Ruth -Trial participant   [http://bit.ly/LifeLabC19VaccineTrialParticipant](https://eur03.safelinks.protection.outlook.com/?url=http%3A%2F%2Fbit.ly%2FLifeLabC19VaccineTrialParticipant&data=01%7C01%7CL.J.Bagust%40soton.ac.uk%7Cb517d8b6787149cf63e208d866c34963%7C4a5378f929f44d3ebe89669d03ada9d8%7C0&sdata=P7p2BBI0tBKrqwqcbeiEhjWAnqKWluDxYwMxJACxwdY%3D&reserved=0)   * Completed participant questionnaires and criteria for vaccine trial * RSPH vaccination video | * KS3 & 4 Science/Biology * Working Scientifically – role and use of evidence in science |
| **2** | **Health and Scientific Data**  **Compare methods used to study health in our communities**  **Describe the types of evidence different data sources can give us**  **Evaluate my own diet** | How do scientists study health in communities - Comparing two research studies.  Evaluating health data in the form of the Eatwell Guide – links to healthy immune system/lower risk | **Hook**: Collect ideas from students about what data and sources they would want to collect to find out about someone’s health.  **How do scientists collect health data?** Use the TeC-19 project and Southampton Women’s survey examples of research projects looking at young people’s health, comparing and identifying the different types of evidence collected, highlighting qualitative and quantitative data sources and what information they can give us about health.  For example, TeC-19 resources include a short transcript and/or audio recording clip of a focus group – *‘What can we learn from this?’ ‘What sort of information can qualitative data give us that we can’t get from quantitative data sources?’*  **What is a healthy diet**? As part of both these studies participants were asked to keep a food diary as one way of collecting information about someone’s diet. Also link made to the concept of needing healthy participants to the Eatwell guide spreadsheet activity.  Students construct their own Eatwell Guide based on the food and drink they recorded for one day, using the spreadsheet provided, compare and evaluate the results with the official Eatwell Guide. Include discussion on  *‘Have eating habits changed during the pandemic? ‘How can we eat well to support our health and immune system to reduce our risk?’*  Introduce the Fridge phots and discuss what information they can give.  Revisit the question at the start of the lesson to add any new ideas about how the methods or sources we could use to collect data on health. | * Teachers’ PowerPoint * Lesson plan * Student booklet * Remote lesson on Articulate * TeC-19 and SWS resources:   + SWS leaflet   + TeC-19 focus group transcripts * South Today clip of TeC-19: <https://youtu.be/sn_SRSVl2hs> * Uni clip of TeC-19: <http://bit.ly/2TjcG7J> * Eatwell Guide spreadsheet | * KS3 & 4 Science/Biology * STEM * Science and Society links (i.e. scientific vs. Social sciences research) * KS4 Food preparation and nutrition |
| **3** | **What are Health Risks?**  **Determine possible risks to health**  **Suggest how different factors might influence an individual’s health**  **Work collaboratively to carry out research on a non-communicable disease** | Exploring non-communicable diseases as main causes of death, how has COVID-19 affected this?  Link between underlying health conditions and increased risk of developing COVID-19 complications. | **Hook:** Discuss the opening question **‘***What are you most likely to die of in the UK?’*  **Causes of death**: Card sort activity with the 18 most common causes of death in the UK, as defined by the WHO. Students rank the cards to identify the 3 most common causes of death and the least. Note the results and highlight that the top three are linked to lifestyle choices and we can therefore reduce our individual risk if we make the right choices.  Students then classify and group the cards in Non-communicable diseases, Communicable and Other, noting how many cards in the Non-communicable group. Expand discussion to look at what impact COVID-19 has had and how non communicable diseases and risk factors increase the risk of complications for COVID-19 patients.  **Causes of death over time:** Discuss with students ***‘****How has this order changed in the past?’ ‘What is the biggest cause for these changes and in the future will be?’* – highlight the advances in public health treatments and link to vaccines.  **Researching non-communicable diseases**: including a question about how COVID-19 impacts this disease*, ‘Would people with it be in the shielding group?’ ‘Are some people more at risk than others?’ ‘Who is more at risk? Why?’*  **What can we all do to reduce our risk?** Students researching specific NCDs in groups and feedback about different NCDs between groups, covering the genetic and environmental factors. | * Teachers’ PowerPoint * Lesson plan * Student booklet * Remote lesson on Articulate * Causes of death cards | * KS3 & 4 Science/Biology * PSHE |
| **4** | **Assessing Health**  **Identify risk factors that can affect our health**  **Analyse evidence from different sources**  **Draw conclusions from the evidence** | What are the health risks for non-communicable diseases?  How at risk is Chris and his family | **Hook:** Picture of healthy and unhealthy lungs and livers***,*** *‘What are the differences?’ ‘Any ideas what may have caused them?’*  **What are the risk factors?** Tower of risk Jenga activity – *‘What does risk mean?’* Look at the ‘risk’ graphic on the power point, listing the risk factors based on NHS data. Students play ‘Jenga’ with blocks colour coordinated according to risk tool. Discuss ‘*Which blocks made tower fall*?’ ‘*Was that the most likely block to make the tower fall? Why?’ ‘What affects those risk factors?’* Talk about family history in the context of risk factors. Discuss how the same risk factors increase the risk of complications for COVID-19 patients.  **‘What health conditions increased the risk for people suffering with COVID-19?**  Using data sources discuss with students*‘What does the data tell us?’ ‘How could you use this data?’ ‘Who might find this data useful?’* Identifying three groups of people with preexisting conditions which increases their risk of severe illness with COVID-19  *‘What extra precautions may these people need to consider to reduce their risk?’*Also note many of these underlying conditions can be linked to lifestyle and we can reduce our individual risk by making the right health choices.Recap on what lifestyle choices can affect our health.  **Grandad’s death certificate**: Introduce the character Chris and his family, Chris finds his Grandads death certificate and notes his Grandad died young at 50yrs from a heart attack and this raises the question about what that might mean for his health.  **Researching and assessing Chris’s family health**: Focusing on the questions, *‘How healthy is Chris?’ ‘What are the health risks that Chris might have to face?’*, information packs with evidence from different stages of Chris’ life will be given to the students. There are three main sources of evidence that will be explored by students initially in their groups and then in whole-class discussion.  The tree sources are:  **A. Family background** – family tree, Grandad’s death certificate, family medical history and set of cards with information about each family members lifestyle.  **B. Chris’s current lifestyle** – food diary, sleep report, activity log, Chris’s Eatwell Guide, Mum’s shopping list, fridge photo, recording from TeC-19 focus group.  **C. Chris’s early development and childhood** - Midwifery notes and baby book, N.B. This activity would suit an extension group.  **Collaborative learning** - Students will summarise *‘Which pieces of evidence are most helpful?’* and *’Why?’* One student from each group moves to the next group to talk to them about what they have found.  Students extract information to make a conclusion about how worried Chris should be about his health, also identify who in Chris’s family is most at risk of COVID-19 based on their health data. | * Teachers’ PowerPoint * Lesson plan * Student booklet * Remote lesson on Articulate * Tower of risk Jenga game * Sources of evidence packs A, B & C | * KS3 & 4 Science * PSHE |
|  | **LifeLab Day**  **Describe how scientists measure health**  **Use scientific equipment safely to collect my health measurements**  **Explain how my genes could affect my health**  **Describe some of the research being carried out at the University and Hospital**  **Design a health pledge to improve my own long-term health** | Activities adapted and developed - to be delivered in school with  equipment delivered via courier in flight cases  and a remote version for individual students working at home. | **Physio health circus** – including CPR, no lung activities due to increased risk of COVID transmission, practical equipment, student instruction cards  **Epigenetics** – animation developed to explain the science and link into Risk over life course graph  **Health Pledges** – students identify an area of their own lifestyle they would like to improve and set themselves a target to improve their own health.  **EACH-B App** - introduced with new promotion video, instructions on how to download app onto smart phones.  **Gel electrophoresis** - practical equipment, student cards and also video to demonstrate practical  **Meet the Scientist** – videos of interviews with scientists on efolio/YouTube orinteractive Zoom **‘live’** link session with scientists | * Teachers’ PowerPoint * Lesson plans * Student booklet * Flight case * Health circus equipment with teacher instructions and student cards * Meet the Scientist recorded interviews * Epigenetics animation * Risk over Lifetime video * Electrophoresis equipment and demo video * Downloading App instructions with QR codes – For EACH-B schools taking part in the RCT | * KS3 & 4 Science/Biology * STEM * KS3 & 4 Physical education * PSHE |
| **5** | **Making Choices**  **Analyse health data and health risks**  **Review progress made with my health pledge**  **Evaluate the marketing strategies used in selling food** | Analyse your own health  looking at food marketing strategies | **Hook**: Guess the food product or company from only the first letter, ‘*How powerful is marketing?’*  **Risk checker**: Using the NHS ‘One You’ Quiz to check their own health, reminder/prompt of their own health pledges  **Who controls what you eat?** Card sort activity focused on making students aware of the marketing tactics and methods used by companies to encourage you to buy junk food.  **Who is feeding teenagers’ junk food habits?** leading into discussion on how young people are being targeted, ‘How do the tactics work?’ *‘How does that make you feel?’ ‘What should be done about it?’*  Summarising their ideas about what changes they would like to make.  Demonstrate to students in the video Biteback 2030 how powerful the tactics are. | * Teachers’ PowerPoint * Lesson plan * Student booklet * Remote lesson on Articulate * ‘How are You’ online NHS quiz * The power of advertising alphabet game * Marketing tactics cards * Biteback 2030 video | * KS3 & 4 Science/Biology * KS4 Food preparation and nutrition * PSHE * English/Media |
| **6** | **Identifying Misinformation**  **Identify fake news and its purpose**  **Describe how misinformation impacts on individuals and society**  **Explain why it is important check information is reliable and trustworthy** | We can’t just believe what we see and read, need to question is this correct?  How can we spot fake news or misinformation? (important to emphasise the ‘How do you know?’ question)  We use lots of sources of information and we need to be able to identify if they are reliable and trustworthy. | Sciencecommunication lesson focusing on misinformation and disinformation.  **What is fake news?** ‘*Where do you find it?*’ *‘What it’s purpose?’* Share examples  Definition of fake news, misinformation, and disinformation, WHO animation  **Identifying the problem** and effects it causes to individuals and society  Quiz – can you spot the signs of fake news? The effect of bubble and echo chambers, giving examples, video  **How do we know if it is reliable and trustworthy?** - Tips on what to look out for and identify misinformation. | * Teachers’ PowerPoint * Lesson plan * Student booklet * Remote lesson on Articulate * WHO animation on Misinformation * Bitesize online Quiz * Beatfreaks animations * RSPH Fake News animation | * KS3 & 4 Science * STEM * PSHE * KS3 & 4 English |
| **7** | **Scientific Health Investigation**  Formulate their own question to investigate health  Design and construct a plan for their own scientific health investigation  Safely carry out their scientific health investigation  Record reliable, precise and accurate data  Make a conclusion based on their data  Present their results from their investigation as a scientific health investigation poster  Evaluate what makes a good scientific health investigation poster | Plan, carry out, write up and present a scientific health investigation | **Planning and carrying out a health investigation**. Students discuss how scientists carry out investigations; aim/hypothesis, collecting reliable/accurate data, controlling variables etc.  Students plan their own investigation with a focus on measuring health.  Students carrying out their investigation and recording their data.  Draw conclusions based on their results.  Evaluate their investigation.  **Presenting their health investigation.** Brainstorm: ‘What is a science poster?’, ‘What does it look like?’, ‘What is it supposed to do?’  Thinking about audience, presentation of actual data, how to make a poster look interesting. The structure of the poster aim/hypothesis/method/results/conclusion etc.  Show students examples/photos of some real scientific posters displayed at University.  **Designing your own scientific poster** - Using the poster templates given in PowerPoint, the students in groups produce their own scientific poster.  Scientific posters can be submitted for British Science Association CREST Bronze awards.  Additional extension activity for classes to hold their own Scientific Health conference.  Possibility to put the health investigation into COVID-19 context if appropriate and link to health message.  Teachers could choose Science investigation or COVID-19 Health messages if short of time. | * Teachers’ PowerPoint * Lesson plan * Student booklet * Remote lesson on articulate * Examples of Posters * PowerPoint Templates for posters * A0 size blank poster templates | * KS3 & 4 Science * STEM |
| **8** | **Delivering a COVID-19 Health Message**  **Understand why peer advice is important for the delivery of health messages**  **Carry out preparations for delivering a message around COVID-19**  **Deliver a health message around COVID-19**  **Carry out a review of the delivery of the COVID-19 message** | **RSPH COVID- 19YHC Unit 2:**  LO1 Understand why peer advice is important for the delivery of messages around COVID-19  LO2 Carry out preparations for delivering a message around COVID-19  LO3 Deliver a message around COVID-19  LO4 Carry out a review of the delivery of the COVID-19 message | **C-19 YHC Health message Campaigns**  Intro, planning, deliver, evaluate a health message around COVID-19 e.g. How to stay safe, reducing transmission, following the rules etc. possibility it could be delivered as a **‘live’** lesson option.  **1 Understand why peer advice is important for the delivery of messages around COVID-19**  1.1 Importance of young people participating in measures: Whilst at lower risk, young people are still able to catch COVID-19 and become ill as a result of it; young people are still able to pass COVID-19 onto family members and others who may be at-risk; symbolic importance of all members of society coming together to follow shared rules.  1.2 Advantages and disadvantages of providing advice to peers: advantages and disadvantages of peer advice compared, such as ‘talking the same language’, similarity of experiences, understanding of barriers or stigma, disadvantages such as not being seen as an expert, lack of experience, lack of authority.  1.3 Peer advice and advice from ‘authority’ figures: peer advice compared with advice from authority figures such as parents or professionals such as teachers; willingness to accept advice from peers and resistance to authority figures; perception that authority figures would not understand issues, greater experience of authority figures, resources available to authority figures compared to peers  1.4 Role and responsibilities of a COVID-19 Young Health Champion: what the COVID-19 Health Champion does and what they cannot help with (boundaries of role); provision of appropriate government health recommendations around COVID-19; where to find further information; where to seek support; cannot offer medical advice and not subject matter experts  **2. Carry out preparations for delivering COVID-19 message**  2.1 Key points of the health improvement message: health improvement message is divided into a small number of key points that should be covered in any presentation on the topic.  2.2 Best-suited delivery medium: Opportunities for delivering the COVID-19 message explored such as assemblies, poster and leaflet campaigns, information stands at local events, social media channels; Merits of each medium discussed, including their suitability in reaching the intended audience, the different ways in which information can be presented when using them, the ability of each medium to be used to monitor and respond to questions, comments or feedback from the delivery of the message.  2.3 Resources: a range of resources are obtained that are relevant to the peer or group to which the COVID-19 message will be delivered.  2.4 Prepare materials suitable of the COVID-19 message: materials are prepared that can be used in the delivery of the COVID-19 message and are suitable and relevant for the chosen peer group.  2.5 Prepare for anticipated questions, comments and feedback: A range of potential questions, comments and feedback are identified and discussed with possible responses considered; opportunities to signpost to other sources of reliable information and support identified: potential difference in nature and style of comments typically received through social media and in- person delivery compared and discussed; strategies for managing comments or questions that raise concerns around the wellbeing of a peer discussed with tutor; strategies for knowing how and where to seek support should offensive or upsetting comments be received agreed with tutor; question  **3 Deliver a COVID-19 message**  3.1 Explain the role: reference to roles, responsibilities and boundaries highlighted in AC 1.4.  3.2 Present a positive message: the COVID-19 message is presented to the chosen peer or group, including a rationale or justification of the topic in language that is appropriate to the audience and the topic of COVID-19; the message is presented in a positive way.  3.3 Style of delivery: style of delivery is appropriate to the topic as well as the needs and interests of the target audience.  3.4 Consider questions, comments and feedback: use of empathy to understand the viewpoint of a respondent; acknowledgement that COVID-19 and the associated pandemic are complex issues; questions are responded to in an appropriate manner; questions, comment and feedback that raise concerns are passed onto tutor through process agreed in 2.5.  3.5 Signpost to reliable sources: Audience signposted to the reliable sources of support and information around COVID-19 identified in 2.5 where necessary.  **4 Carry out a review of the delivery of the COVID-19 message**  4.1 Assess the strengths: determine which elements of the COVID-19 message went well, including content, pitch, structure, interaction based on feedback from sources such as mentors, peers and audience members.  4.2 Assess what could be improved: determine which elements of the COVID-19 message could be improved in areas such as justification of topic, tone, relevance to audience and level of interaction based on based on feedback from sources such as mentors, peers and audience members.  **Assessment**  Attainment of the Learning Outcomes for this unit can be assessed by a portfolio of evidence or workbook. Centre assessment decisions will be subject to scrutiny by RSPH.  RSPH has developed a **Learner Workbook**for assessment evidence that centres can use directly. Centres can also modify the workbooks to suit their own particular requirements, subject to prior approval from RSPH. The application form for centre devised assessments is available via the Centre Area.  If **Portfolio Evidence**is chosen as the assessment method, please use the Portfolio Assessment Summary forms for each unit along with the Portfolio Front Sheet and attach to the portfolio. | * Teachers’ PowerPoint * Lesson plan * Student booklet * Remote lesson on articulate | * PSHE * English |