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# YOUNG IMAGINEERS challenge

KS2 Primary
Ages 7-11

# Delivery Notes

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## Programme summary

This programme is an exciting science-based challenge aimed at primary school children across the UK. Learning can take place in the classroom through teacher facilitation or as a home-based project. The resources have been designed to engage pupils in the role of science in creating a world where we all want to live. The Young Imagineers Challenge requires young people to utilise their communication, enquiry, and literacy skills to share important issues they feel the world faces today and choose one thing they would like to be solved in the future. The programme culminates with young people's ideas being brought to life through a series of live lessons; undertaken by experts in the fields of health, sustainability and technology.

**Suggested timing:** 2 x 1-hour sessions. (One teacher-led).

### Activities

The programme centres around four core principles; explore, create, collaborate, and inspire. The activities can be used flexibly, according to the time you have, and could also be split over more than two lessons to allow more in-depth exploration of the content.

### Preparation

The facilitator should familiarise themselves with all the resources required for the session prior to delivery. They should also ensure that the room has a whiteboard or a screen and projector to enable viewing of the PowerPoint presentation, all activity sheets are printed, and pupils are sat in accordance with their health and safety policy.

### Resources

- Young Imagineers Challenge Delivery Notes
- Young Imagineers Challenge PowerPoint Presentation
- Young Imagineers Challenge Activity Sheet 1 (x2)
- Young Imagineers Challenge Activity Sheet 2 (x2)
- Young Imagineers Challenge Entry Form

# PART ONE

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## Learning objective

The **Young Imagineers Challenge** aims to teach children about the contribution science has made to society and how these have benefited people all over the world. Young people throughout the programme will utilise their communication skills by discussing ideas and opinions, as well as develop their vocabulary in written work through the creation of their own challenge statements. Pupils will learn how to submit their competition entries in the hope that their **Young Imagineers Challenge** statement will be the focus of one of the live lessons in the future.

## Learning outcomes

Pupils will:

- ***Identify*** discoveries in science throughout history.
- ***Explain*** how scientific discoveries benefit people in the world.
- ***Compare*** different ideas and opinions using speaking and listening skills.
- ***Select*** language tools that will engage readers and use this understanding to write a Challenge Statement.
- ***Understand*** how to submit a Challenge Statement and vote for other entries on the Young Imagineers website.

## Starter (5 mins)

Introduce slides 1-3 of **Young Imagineers Challenge PowerPoint presentation**.

- Show pictures of different inventions.
- Ask pupils to identify the images and choose the one they think is best.
- Feedback correct answers. Explain how these objects have changed the way we live our lives today.
- Introduce the learning objectives and outcomes for the lesson.

**EXTENSION:** Ask pupils to choose their favourite invention and explain their choice.

**NOTE:** It is recommended that this task be carried out individually in silence and answers written on paper or mini whiteboards; reviewing answers as a class discussion.

## Main activities (50 mins)

### Activity 1: Explore (20 minutes)

Introduce slides 5-10 of the **Young Imagineers Challenge PowerPoint presentation.**

- As a class read through the content in the slides.
- Reinforce the importance of different scientists throughout history and the impact they have made in the following three areas:

  *Health, Sustainability, Technology.*
- Check pupil learning through completion of **Young Imagineers Challenge Activity Sheet 1** quiz.

**EXTENSION:** Ask pupils to complete extension questions and read through top facts.

**NOTE:** It is recommended that class and pair discussions are used whilst introducing the content in the slides and then activity sheet 1 is completed individually in silence.

### Activity 2: Create (15 minutes)

Introduce slides 11–14 of the **Young Imagineers Challenge PowerPoint presentation**.

- Direct pupils to make a list of all the things they think are challenges in the world today.
- Ask pupils to choose their favourite challenge.
- Ask pupils to complete **Young Imagineers Challenge Activity Sheet 2** which introduces persuasive language to young people to make their Challenge Statement as interesting and engaging as possible.

**EXTENSION:** Ask pupils as a challenge to discuss their choices from their list and place into three categories: health, sustainability, and technology.

**NOTE:** It is recommended that this task be carried out with pupils working together in pairs and small groups throughout.

## Main activities (50 mins cont...)

### Activity 3: Collaborate (10 minutes)

Introduce slides 15–18 of the **Young Imagineers Challenge PowerPoint presentation.**

- Ask pupils to write their final version of their Challenge Statement on paper.
- Ask young people to share their Challenge Statements in pairs.
- Inform class how entries will be submitted for **The Young Imagineers Challenge Competition** and how they can vote for other entries on Young Imagineers website.

**EXTENSION:** Invite young people to read out their Challenge Statement to the class.

**NOTE:** It is recommended that pupils write their challenge statements on their own and then share their final work. Also remind pupils to listen respectfully to those who wish to read their statement to the rest of the class.

### Activity 4: Inspire (5 minutes)

Introduce slides 19–22 of the **Young Imagineers Challenge PowerPoint presentation**.

- Explain to class how their Challenge Statement can determine the type of live lesson carried out later in the year.
- Outline how young people can win **The Young Imagineers Challenge Competition**.

**EXTENSION:** Answer any further questions the class may have before moving onto the plenary.

**NOTE:** It is recommended that this task be carried out as a class discussion.

## Plenary (5 mins)

Introduce slides 23–24 of the **Young Imagineers Challenge PowerPoint presentation**.

Ask pupils to complete the following sentences...

- A new scientist I learnt about today was...
- They were involved in inventing...
- This was good for the world because...
- I am looking forward to watching a live lesson taught by real scientists because...

**EXTENSION:** Review the learning outcomes from the session.

**NOTE:** It is recommended that this task be carried out with a peer discussion first and then pupils complete individually to summarise their learning.

## Competition Entries

Facilitators/pupils/parents can submit competition entries.

It is important to note that no personal details such as full names or phones numbers, or addresses should be provided in the digital submission, nor be mentioned in the Challenge Statement.

Competition entry is uploaded to: https://youngimagineers.equinor.com/.

The information that will be required in the competition submission is as follows:

School Name - Town/City - Pupil First Name(s) - Age Group – Teacher/Parent Email.

Challenge Statement is uploaded as a file/image.

The official rules will need to be agreed to prior to submission.

## Support

- Throughout the Young Imagineers Challenge PowerPoint presentation and the **Young Imagineers Challenge Activity Sheets** there are extension questions to provide further learning opportunities for high ability pupils.
- Throughout the **Young Imagineers Challenge PowerPoint presentation** and the **Young Imagineers Challenge Activity Sheet 1** definitions of key words have been given and highlighted to support pupils unfamiliar with specific terminology.
- There are two versions of the **Young Imagineers Challenge Activity Sheets 1 and 2** to provide differentiated work for a variety of learning needs.
- Extension tasks and home learning activities are suggested in the delivery notes to provide further work in lesson, if time permits, or to extend the learning beyond the classroom.

## Extension/homework ideas

Activities below are suggested so that pupils have the choice of completing in class if time permits or trying at home as independent learning tasks.

- Pupils to use a computer to research a scientific discovery of their choice.
- Pupils to be allocated one of the nine scientists explored in the session to find out more information for a two-minute presentation.
- Pupils to find out young 'scientists' who are trying to change the world.
- Pupils to create their own mission wall where they decorate their challenge statements on paper and the whole class hangs on a classroom wall.
- Pupils create a short story or comic strip about them being a scientist and how they have changed the world.

## Answers

### Starter

1= **Bicycle.** 2= **Computer.** 3= **Car.** 4= **Medicine/Antibiotics.** 5= **Aeroplane.** 6= **Telephone.** 7= **Rocket.** 8= **Microscope.** 9= **Telescope.** 10= **Television.** 11= **Stethoscope.** 12= **Radio.**

### Explore

- Can you think of the names of any vaccinations young people have today?
**MMR – measles, mumps, and rubella.**

- What do you think would happen if we didn't have blood banks?
**People might not survive operations.**

- Wind turbines are a type of renewable energy. What does renewable mean?
**It means it can be used again. (Re-used).**

- What happens to the Earth when too much carbon dioxide is released?
**The temperature increases known as global warming.**

- How many people in the world do you think own a mobile phone?
**This value is always changing, however in 2019, nearly 80% of the UK adults had a mobile phone.**

### Activity Sheet 1

1=**(a)** 2=**(b)** 3=**(c)** 4=**(c)** 5=**(a)** 6=**(a)** 7=**(a)** 8=**(b)** 9=**(c)** 10=**(a)**

### Create

**Answers throughout this section are subjective and all ideas should be welcomed and discussed.**

### Activity Sheet 2

**Pupils will produce different statements using varying writing tools; there is no right or wrong answer. It is important however to ensure young people understand and can correctly identify different types of persuasive writing.**

| | |
|---|---|
| Adjectives | Describing words. |
| Alliteration | Alliteration is when words start with the same sound. |
| Anecdotes | An anecdote is a short story about a real person or event. |
| Simile | A simile describes something by comparing it to something else, using like or as. |
| Metaphors | A metaphor is a word, or a phrase, used to describe something as if it were something else. |

# PART TWO

### How will the live lessons work?

Live lessons will be delivered over Microsoft Teams or Young Imagineers' website as a livestream so that schools are able to access and show to pupils either in class or from home.

Delivery is by slideshow/screen sharing/presentations with a message board to encourage discussions and questions. Young Imagineers external deliverers will be able to hide their backgrounds for better security and privacy. Sessions will be recorded for training and monitoring purposes and can be made available to learners after the event.

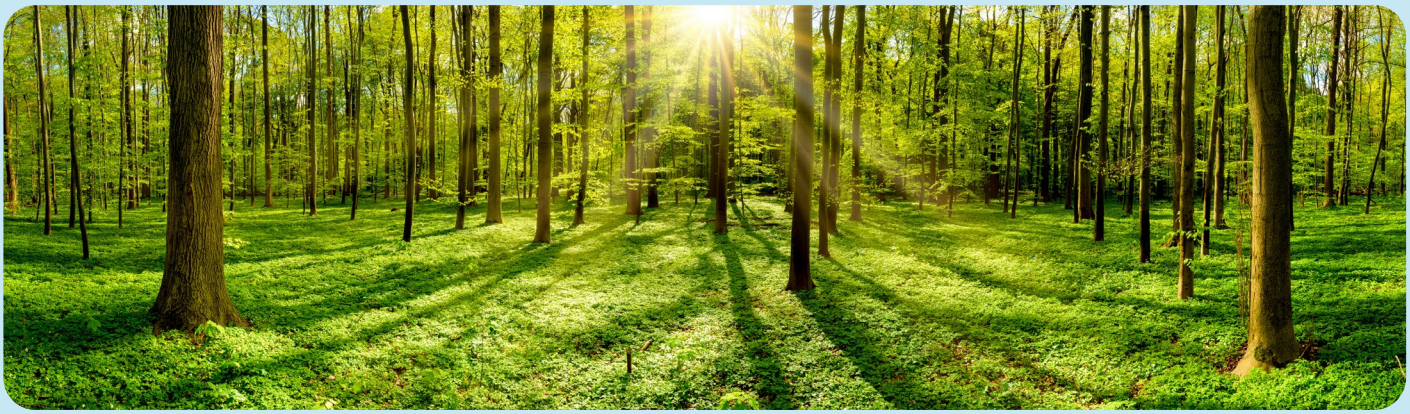
## Live lessons

Three 20-minute live lessons; one from each of the following themes...

1. Health
2. Sustainability
3. Technology

## Introduction (2 mins)

- Speaker to introduce themself: Their name, area of expertise, role/job, how they got into this area of work, what they love most about science.
- Speaker to introduce the Young Imagineers Challenge Statement that they will be exploring in the live lesson today.



## Main activities (18 mins)

### Activity 1: Explore (5 minutes)

- Speaker to introduce scientific concepts that underpin the chosen challenge. (This will fall into one of three categories: health, sustainability, or technology).

### Activity 2: Create (8 minutes)

- Speaker to explain the creative ways in which scientists are trying to tackle this problem using a current case study where advances in science are taking place.
- Quick true or false quiz to check the learning, (pupils can use thumbs up or down and classroom teacher monitors or message board if available).

### Activity 3: Collaborate (3 minutes)

- Speaker to provide some information on some famous scientists/people who are working together now to try and solve this challenge. For example, Greta Thunberg, Boyan Slat, Elon Musk.

### Activity 4: Inspire (2 minutes)

- Speaker to finish with a rousing and inspiring message about young people, the scientists of tomorrow.
- Speaker to close the session.

# Curriculum Links

## ENGLAND[1]

### English

- Use relevant strategies to build their vocabulary.
- Articulate and justify answers, arguments and opinions.
- Maintain attention and participate actively in collaborative conversations, staying on topic and initiating and responding to comments.
- Use spoken language to develop understanding through speculating, hypothesising, imagining and exploring ideas.
- Identifying the audience for and purpose of the writing, selecting the appropriate form and using other similar writing as models for their own.
- Précising longer passages.
- Proposing changes to vocabulary, grammar and punctuation to enhance effects and clarify meaning.

### Science

- Develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry, and physics.
- Develop understanding of the nature, processes, and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them.
- Are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.

## WALES[2]

### English

- Increase their confidence in language use by drawing on their knowledge of English (including standard English), Welsh and other languages.
- Respond orally to a variety of stimuli and ideas, including written and dynamic texts, e.g. paintings, music, film, still and moving images.
- Communicate for a range of purposes, e.g. recount and present information, instruct, argue, and explain a point of view, discuss an issue, persuade, question and explore interpretations, convey feelings.
- Speak and listen individually, in pairs, in groups and as members of a class.
- Engage in activities that focus on words, their derivation, meanings, choice and impact.
- Use appropriate vocabulary suitable for the situation or purpose.

### Science

- Learners develop their communication skills across the curriculum through the skills of oracy, reading, writing and wider communication.
- Learners should be given opportunities to study the work of scientists and to recognise the role of experimental data, creative thinking, and values in their work and in developing scientific ideas.
- Activities should foster curiosity and creativity and be interesting, enjoyable, relevant, and challenging for the learner. They should enable learners to initiate, explore and share ideas. Activities should enable learners to extend, refine and apply their skills, knowledge and understanding in new and more abstract situations. They should allow time for thinking, peer discussion and reflection.

[1] https://www.gov.uk/government/collections/national-curriculum#curriculum-by-key-stages

[2] https://hwb.gov.wales/curriculum-for-wales-2008/key-stages-2-to-4

## SCOTLAND[3]

### English

- Contributes a number of relevant ideas, information and opinions when engaging with others. Shows respect for the views of others and offers own viewpoint. Builds on the contributions of others, for example, by asking or answering questions, clarifying points, or supporting others' opinions or ideas. (LIT 2-02a)
- Creates texts selecting subject, purpose, format, and resources for a range of purposes and audiences. (LIT 2-20a)
- Uses suitable vocabulary for purpose and audience. (LIT 2-09a)
- Recognises techniques used to influence the reader, for example, word choice, emotive language, rhetorical questions and/or repetition. (LIT 2-18a)
- Reviews and corrects writing to ensure it makes sense, is technically accurate and meets its purpose. (LIT 2-23a)

### Science

*Skills and attributes of scientifically literate citizens:*

- Demonstrates understanding of the relevance of science to their future lives and the role of science in an increasing range of careers and occupations.
- Demonstrates increased awareness of creativity and inventiveness in science, the use of technologies in the development of sciences and the impact of science on society.
- Expresses informed views about scientific and environmental issues based on evidence.

## NORTHERN IRELAND[4]

### English

- Should provide opportunities to participate in group and class discussions for a variety of curricular purposes
- Should provide opportunities to know, understand and use the conventions of group discussion
- Should provide opportunities to describe and talk about real experiences and imaginary situations and about people, places, events and artefacts
- Should provide opportunities to read aloud, inflecting appropriately, to express thoughts and feelings and emphasise the meaning of what they have read
- Should provide opportunities to participate in modelled, shared, paired, and guided reading experiences.
- Should provide opportunities to write for a variety of purposes and audiences, selecting, planning, and using appropriate style and form.

### Science

- Should provide opportunities for using everyday language to increasingly precise use of subject specific vocabulary, notation and symbols.
- Should provide opportunities to use tools, components and materials to design and make to combining, designing and making skills and techniques with knowledge and understanding in order to present solutions;
- Should provide opportunities to sequence events and objects on a time line in chronological order to developing a sense of change over time and how the past has affected the present.

*Changes over time:*

- How change is a feature of the human and natural world and may have consequences for our lives and the world around us.
- The effects of positive and negative changes globally and how we contribute to some of these changes.

[3] https://education.gov.scot/improvement/learning-resources/curriculum-for-excellence-benchmarks/

[4] https://ccea.org.uk/learning-resources/northern-ireland-curriculum-primary

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