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| **LMI Video Resources: Teacher Guide** |
| **Session:** | **KS2 - Energy: Powering Up** |
| **Summary:** | A series of 4 short videos have been made with employers in the North East to showcase key employment sectors from the point of view of primary aged children. This session has been developed to support KS2 when watching the Energy sector video called Powering Up.  |
| **Programme linked to:**  | North East Ambition’s Career Benchmarks: Primary Pilot | **Career Benchmarks** | Benchmark 2: Learning from Career and Labour Market Information |
| **Benchmark characteristics link** | * The school provides multiple opportunities / activities that encourage all children to explore different careers (this may also include the use of career websites and online resources).
* Throughout their time in school (by the end of Y6 or by end of Y4 in a first school) all children have explored basic labour market information to expand their awareness of future opportunities and possibilities.
* Throughout their time in school (by the end of Y6 or by end of Y4 in a first school) every child has explored a range of different careers and job roles and can articulate their personal aspirations.
* Labour Market Information is used to tackle stereotypical thinking and to raise aspirations.
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| **Age range:** | **KS2**  | **Number of participants:** | **Whole class** |
| **Expected duration:** | **90-120 minutes** | **Room requirements:** | **Classroom with Smart Board or projector to share PowerPoint** |
| **Learning objectives**: | * Learn about ‘energy’ and why we need it.
* Understand the difference between renewable and non-renewable energy, and the importance of greener cleaner energy.
* Explore renewable technologies and who helps make them.
* Gain an awareness of the different job roles there are in the production of energy and how these may be appealing as a future career.
* Gain an understanding of what skills and academic subjects are required for roles in this sector.
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| **Links to curriculum:** | * **English:** Developing active listening skills. Learning new vocabulary.
* **Art and Design**: Produce creative work, exploring their ideas.
* **Science:** Recognise the importance of renewable energy and begin to understand the importance of sustainability.
* **PSHEE:**Identifying skills and career opportunities.
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| **Resources required:** | Active Listening Pupil Worksheet – 1 copy per pupilHow do we create energy from wind Pupil Worksheet – 1 copy per pupilDesign a Robot Pupil Worksheet – 1 copy per pupilI Could Be Pupil Worksheet – 1 copy per pupilPlain paper for noting down quiz answersPencils and colouring pens/pencils |
| **Activity 1** | **Introduction to Energy** | **15 minutes** |
| **Slide 1-5:** Session aims and introducing, What is energy? Warm up activity (to be completed independently or with a partner) name 3 items they can see that use electricity. Discuss with the class what they already know about energy, Where do we get it from? In this discussion find out what the learners already know about energy sources. **Slide 6-9:** Renewable and non-renewable energy. Encourage discussions throughout. See the notes on power point presentation for extra information to facilitate discussions. **Slide 8** is created with questions e.g. To convert the light energy from the sun we have…? See if pupils can identify the missing answer before revealing it. The answer only appears after you click again e.g. ‘Solar Panels’**Slides 10-17** introduce some of the vocabulary featured in the video. Before revealing the simple definitions, see if pupils know what each word means. **Slide 16** is to help learners understand what an engineer is. Ask the learners to look around the room and come up with 3 things that engineers might have made or might be responsible for.The answer is that everything apart from the living things in the room will most likely have needed an engineer to help create them. |
| **Activity 2** | **Video, active listening & quiz** | **25 minutes**  |
| **Slide 18:** Directs you to the link to watch the Powering Up video. Hand out the ***‘Active Listening Pupil Worksheets’*** and explain that they need to listen careful and whenever they hear a job mentioned then they tick it on their worksheet. Go through their answers when the video has finished. Please note – the same sheet can be used for all 4 sector videos meaning that once they have watched all 4 videos they should have every job ticked on their sheets. It is suggested that you watch the video again prior to commencing the quiz, this however, is at your discretion and dependent on the needs of the pupils.**Slides 19-31:** Quiz – There are 6 questions, each slide features a question based on the video. Read these aloud to pupils and allow participants time to think and write down their answer on a sheet of paper. There are now answer slides for each question. For each slide ask students to share their answers before revealing the answers on the board.  |
| **Activity 3** | **How do we create energy from wind?** | **20 minutes** |
| **Slide 32:** Challenge: How do we create energy from wind?Give each learner the ***How do we create energy from wind? Pupil Worksheet.*** Ask learners to cut out the pictures and stick them in the correct order to show how energy is created by wind power. |
| **Activity 4** | **Design a Robot Activity** | **20 minutes**  |
| **Slide 33:** Challenge: Design a Robot. Give each learner the ***Design a Robot Pupil Worksheet***. In the video, the Engineer called Anthony talked about there being robots in the future that could climb the turbine to carry out repairs. The learner’s challenge is to draw a robot that the engineers can use to climb up the turbine and mend one of the broken blades.  |
| **Activity 4** | **What job would you enjoy doing? Activity** | **20 minutes** |
| **Slide 34:** Challenge: What job would you enjoy doing?Give each learner the **‘I Could Be Worksheet’.** Ask learners to choose one of the jobs they have just learnt about and draw a picture of themself doing this jobAdditional question on the sheet are: * List the skills you think you would need to do the job.
* What would you enjoy most about doing this job?
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| **Links to additional resources** |
| **STEM Learning – Energy Resources** [**https://www.stem.org.uk/resources/community/collection/11701/energy**](https://www.stem.org.uk/resources/community/collection/11701/energy)Design and build a wind turbine, discover which appliances use the least electricity and link ideas about electricity to design and engineering. This list contains ideas for engineering activities using the context of energy and sustainability.**STEM Learning – What is Engineering**[**https://www.stem.org.uk/resources/elibrary/resource/434950/what-engineering**](https://www.stem.org.uk/resources/elibrary/resource/434950/what-engineering)This resource provides an introduction to engineering for primary children. It can be used for a whole school assembly with follow-on inquiry work, or with one class, and would be suitable for working with a STEM Ambassador. The resource aims to break down preconceptions about engineering, looks at what engineering is and what different engineers do.**E-on – Energise Anything Activity Centre**[**https://www.eonenergy.com/about-us/community-matters/energise-anything/animations-and-activities.html**](https://www.eonenergy.com/about-us/community-matters/energise-anything/animations-and-activities.html)Free resources designed by STEM experts to bring energy to classrooms**EDF Renewables for Educators** [**https://www.edf-re.uk/what-is-wind-power/edf-renewables-for-educators**](https://www.edf-re.uk/what-is-wind-power/edf-renewables-for-educators)Helping teachers and educators bring the science curriculum to life through trips to our wind farms, workshops and learning resources on renewable energy. |