

## Work and power

*TOPIC* : physics, work, power, Watt, energy, Newton, Joule

*LEVEL* : upper intermediate/advanced

*Time* : 45 minutes

*Objectives:*

- to learn or revise vocabulary connected with power, work and energy
- to learn about the concepts of power and work
- to develop reading, speaking and listening comprehension skills
- to enable students use the Internet to gather specific information

*Language functions:*

- to exchange ideas about work , power and physics in general.
- to understand a written text and listening material
- to communicate in English

*CLIL:* Physics, IT Technology

*MATERIALS:* websites, worksheets

For this lesson, you will need:

- Computer with Internet access

STAGE	AIMS	PROCEDURE	MATERIALS/ RESOURCES	TIME
<b>WARM UP</b>	-to get students interested in the topic  -to encourage them to work in pairs	<b>PAIR WORK</b>  Sts work in pairs. They are given a handout (worksheet 1) with some questions on physics. They take turns and ask each other questions. They are encouraged to ask follow up questions to get more details.	Worksheet 1	5 min
<b>MAIN PART OF THE LESSON</b>	- to develop reading comprehension, vocabulary, and summarizing skills	<b>READING COMPREHENSION</b>  Sts are told that they are going to read a text on James Watt. They go the following website: <a href="http://www.bbc.co.uk/history/historic_figures/watt_james.shtml">http://www.bbc.co.uk/history/historic_figures/watt_james.shtml</a> and read about this great inventor. After accomplishing the task, they have to do 1 reading comprehension exercise (worksheet 2). When they finish, students compare answers with the rest of the class.	Worksheet 2  <a href="http://www.bbc.co.uk/history/historic_figures/watt_james.shtml">http://www.bbc.co.uk/history/historic_figures/watt_james.shtml</a>	5min



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	<p>-to develop reading skills</p> <p>-to search for information on the Internet</p>	<p><b>WEBQUEST</b></p> <p>Sts are given a handout (worksheet 3) with a webquest on work, power and energy. There is a list of questions that they have to answer and a number of websites they should visit.</p>	Worksheet 3	10 min
	<p>-to develop listening skills</p> <p>- to develop some terminology connected with physics</p> <p>-to enable students to explore the importance of the concepts of law and power</p>	<p><b>LISTENING</b></p> <p>Sts are asked what they have already learn about James Watt and his inventions.</p> <p>Sts are told that they are going to watch and listen to a short video on <a href="http://ed.ted.com/lessons/how-does-work-work-peter-bohacek">http://ed.ted.com/lessons/how-does-work-work-peter-bohacek</a> about the concepts of work and power which help us unlock and understand many of the physical laws that govern our universe. An educator, Peter Bohacek , explores the interplay of each concept when applied to two common objects -a lightbulb and a grandfather clock.</p> <p>They are given a handout (worksheet 4) with some sentences they have to complete while listening. After they finish, they compare the answers with the rest of the class.</p>	<p>Worksheet 4</p> <p><a href="http://ed.ted.com/lessons/how-does-work-work-peter-bohacek">http://ed.ted.com/lessons/how-does-work-work-peter-bohacek</a></p>	10min
	<p>-to revise vocabulary</p> <p>- to revise basic knowledge about work and power</p>	<p><b>ONLINE QUIZ</b></p> <p>Sts go to the following website:  <a href="http://www.qldscienceteachers.com/junior-science/physics/quizzes/work-and-power">http://www.qldscienceteachers.com/junior-science/physics/quizzes/work-and-power</a>            where they find a self- check online quiz on work and power. They complete the answers. If they find it difficult, they can surf the Internet to find the answers or translate unknown vocabulary.</p>	<a href="http://www.qldscienceteachers.com/junior-science/physics/quizzes/work-and-power">http://www.qldscienceteachers.com/junior-science/physics/quizzes/work-and-power</a>	10 min
<b>WRAP - UP/ CLOSURE</b>	<p>-to revise vocabulary which sts came across during the lesson</p>	<p><b>WORDSEARCH PUZZLE</b></p> <p>Students get a handout (worksheet 5) with a word search featuring words related to work, power and energy. If time does not allow to do it in the classroom, they will do it as their homework.</p>	Worksheet 5	5 min

### SOURCES:

[http://www.bbc.co.uk/history/historic\\_figures/watt\\_james.shtml](http://www.bbc.co.uk/history/historic_figures/watt_james.shtml)

<http://kmhs.typepad.com/files/energy-work-power-webquest-1.doc>

<http://ed.ted.com/lessons/how-does-work-work-peter-bohacek>

<http://www.qldscienceteachers.com/junior-science/physics/quizzes/work-and-power>