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Machines Then and Now

Subject Area

The World of Science & Technology

Topics & Curriculum Links

materials and components (Science; Technology)

machines in the environment (Geography)

machines that help people (Technology; Civics)

sizes and measurements (Mathematics)

energy and fuel (Science)

places and countries (Geography)

dates and events (History)

Vocabulary

machines; tools; materials; transportation; buildings; weather; fuel; computer parts; numbers; measurements; dates; places; countries

Grammar

present simple; past simple; future simple; question forms; imperative; adjectives; prepositions; adverbs

Teaching Ideas

See also [pages 6–7](#) for general ideas that you can adapt. Or go to www.oup.com/elt/teacher/readanddiscover

READ & TALK Big and Small

After reading Chapter 10, students do research, using books or the Internet, about more very big and very small machines. Then they write about their machines and display the information with pictures. They can use the models in Chapter 10, for example: *It's a / an ... It's ... meters high / long. It has ... It weighs ... It's smaller / bigger than a ...* Students can present their machines to the class.

READ & TALK A Machine Presentation

After completing Project 2, students present their machine to the rest of the class. They can write and talk about their machine like this: *This machine is called a / an ... The machine can ... It's for ... It's made of ... [Name] invented it in ...* Or other students can ask the questions on page 45 of the Reader. Students can then display all the machine posters together. They can put the machines in chronological order, maybe with a time line, to show when the machines were invented or first used.

Machines Research

Students choose a material, for example, wood, stone, metal. Or they choose a part, for example, lever, ramp, pulley. Then they do research, using books or the Internet, about machines and the material or part chosen. They then present their findings on a poster.

Activities Answers

Pages 24–25 1 1 stone 2 wood 3 bone 4 metal 2 1 stone and wood. 2 stone and bone. 3 wood. 4 wood. 5 stone and bone. 6 wood.

3 1 machines 2 wood 3 farming 4 plows 5 levers 6 tools 4 1 People used bows to shoot arrows. 2 They built canals to get water for their plants. 3 They used levers to move heavy objects like rocks. 4 People started making metal tools about 5,000 years ago.

Pages 26–27 1 1 wheel 2 clay pot 3 rollers 4 axle 5 cart 6 car 2 1 People used rollers to move heavy objects. 2 An axle is a bar that connects two wheels. 3 Potters used wheels to make clay pots. 4 The London Eye is a very big wheel. 5 Carts and chariots are vehicles with wheels. 3 1 false 2 true 3 true 4 false 5 false 4 1 vehicle 2 wheelchair 3 skateboard 4 bicycle 5 chariot 6 rollers

Pages 28–29 1 1 temple 2 rope 3 pulley 4 block 5 ramp 6 crane 2 1 ramps 2 blocks 3 workers 4 cranes 5 pulleys 6 ropes 3 1 They help us to lift objects more easily. 2 They needed many workers, because the blocks were very heavy. 3 They used rollers to move the blocks up the ramps. 4 The biggest pyramid in Egypt is at Giza. 5 The biggest pyramid is 138 meters high. 4 1 used 2 tied 3 put 4 lifted 5 pulled 6 needed

Pages 30–31 1 1 watermill 2 sail 3 arm 4 millstone 5 wheel 6 axle 7 river 8 windmill 2 1 true 2 true 3 false 4 true 5 false 6 false 3 1 flour 2 water 3 wheel 4 axle 5 wind 6 sails 7 arms 8 grain 4 1 has 2 works 3 turns 4 breaks 5 pushes; the secret word is: nature

Pages 32–33 1 1 water clock 2 digital clock 3 mechanical clock 4 sand clock 5 sundial 2 1 Sundial: pointer, sun; Water Clock: pots, water; Sand Clock: glass bubbles, sand; Mechanical Clock: pendulum, gears, springs; Digital Clock: batteries 3 1 true 2 false 3 true 4 true 5 false 6 false 4 digital, sand, mechanical, clock, shadow, bubble, sundial, numbers, batteries, spring

Pages 34–35 1 1 bus 2 plane 3 car 4 train 5 helicopter 6 boat 7 diesel 8 wood 9 gasoline 10 oil 11 biodiesel 12 coal 2 1 Buses can travel long distances. true 2 Today many vehicles use wood. false 3 Electric cars use energy from batteries. true 4 Trains and planes use human energy. false 5 Biodiesel is made from plant materials. true 3 1 Most vehicles use gasoline or diesel. 2 Electric cars don't produce smoke or pollution. 3 Bicycles use human energy. 4 free answer

Pages 36–37 1 1 plane 2 propeller 3 hot-air balloon 4 helicopter 5 jet engine 6 airship 2 1 Hot-air balloons are slow and hard to control. 2 Helicopters can be useful in emergencies. 3 Some planes have powerful jet engines. 4 Planes didn't exist 200 years ago. 3 1 false 2 true 3 false 4 false 5 true 4 1 freight 2 propellers 3 engine 4 passengers 5 hospital 6 helicopter; the secret word is: flight

Pages 38–39 1 1 telephones, sounds 2 televisions, images 3 Radios, wires 4 cell phones, messages 5 satellites, programs 2 1 John Logie Baird invented the first television in 1926. 2 Guglielmo Marconi invented the radio in 1895. 3 Inventors invented the color television in 1944. 4 Alexander Graham Bell invented the telephone in 1876. 3 communicate, photo, wire, message, screen, radio, sound, image, transmit, invent, satellite, program 4 free answers

Pages 40–41 1 1 speaker 2 monitor 3 cursor 4 printer 5 modem 6 headphones 7 keyboard 8 joystick 9 mouse 2 1 big 2 30; 3 expensive 4 1980; 5 Web 3 1 watch movies 2 print documents 3 play games 4 type words 5 click on buttons 6 use the Internet 7 listen to music 4 1 The ENIAC computer was built in about 1946. 2 The ENIAC computer cost about 500,000 dollars. 3 Tim Berners-Lee invented the World Wide Web, or the Web. 4 We can move the cursor with a mouse. 5 free answer

Pages 42–43 1 1 96, 240, 13,500; 2 1.7, 4.8, 180; 3 65, 360, 5,400; 2 1 cruise ship 2 mining machine 3 microscopic 4 passenger 5 vehicle 6 scientists 3 1 true 2 false 3 false 4 true 5 true 6 false 7 true 8 false 4 1 The Bagger is a mining machine. 2 They will use nanobots to help people who are sick. 3 The Oasis has three swimming pools. 4 & 5 free answers