

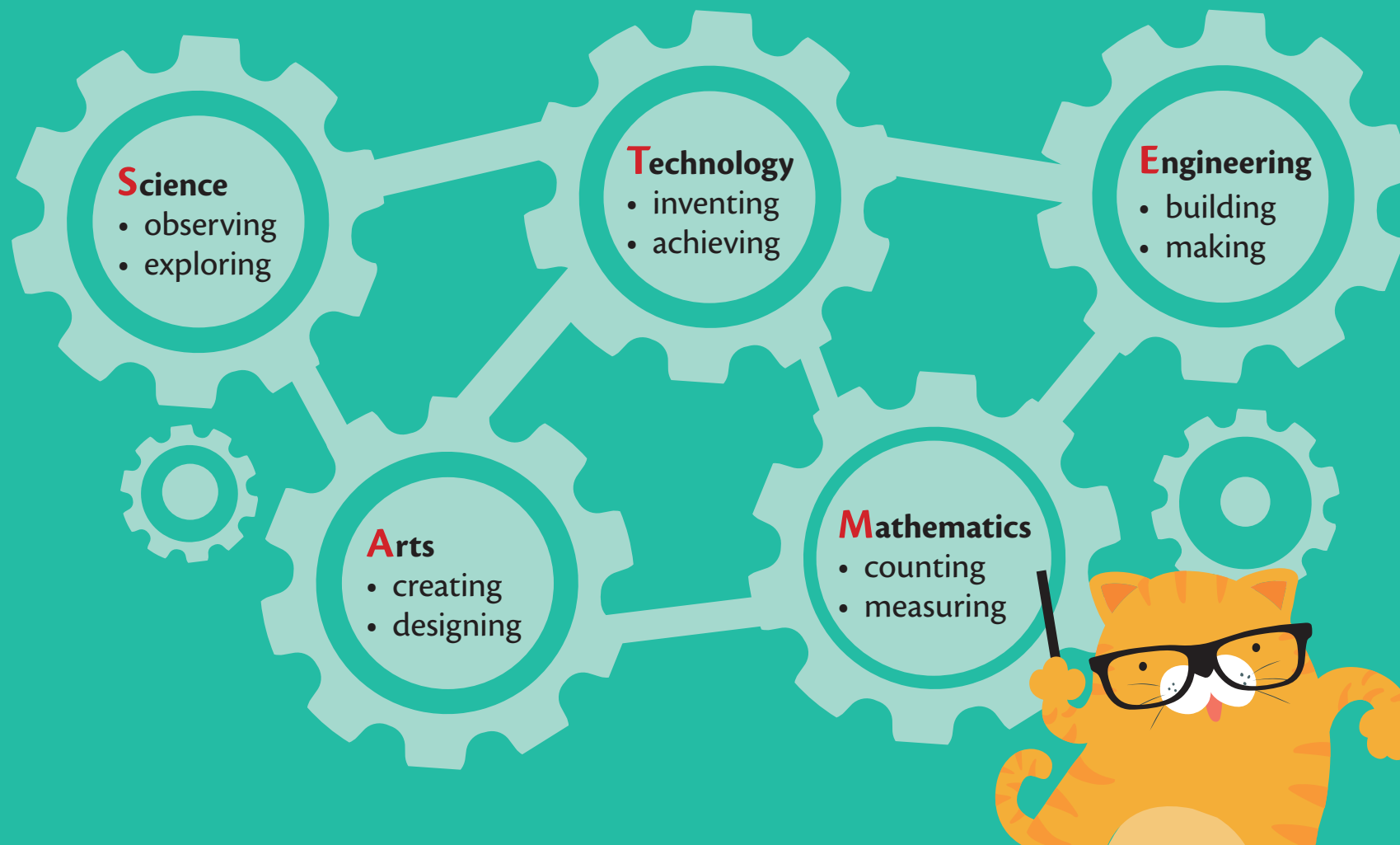


# STEAM education

★ strengthen learners' ability to **integrate and apply knowledge and skills**

- ⚙️ enhance creativity
- ⚙️ nurture problem-solving skills
- ⚙️ develop collaboration skills
- ⚙️ foster innovation

## STEAM in *Living Oxford English*



# A variety of topics

**Kids Craft** April Issue

## Treasure from rubbish

Do you hate throwing away things? Let's learn how to make useful things from rubbish.

**A desk tidier**

First, collect three toilet paper rolls, a piece of cardboard and some pieces of craft paper.

Next, cut the toilet paper rolls into different sizes **carefully**.

Then, stick pieces of craft paper onto the rolls. Think creatively. You can stick simple patterns or pictures of animals on them.

After that, glue the rolls together.

Finally, stick one end of the rolls onto a piece of cardboard.

## Reuse old things

## Make a rainbow

### An experiment to make a rainbow

**You need:**

- a torch
- modelling clay
- a piece of white paper
- a box
- a mirror
- water

**The experiment set-up:**

To make a rainbow, follow these simple steps:

- Step 1** Half fill the box with water.
- Step 2** Put the mirror in the water. Hold it in place with modelling clay.
- Step 3** Shine the torch at the part of the mirror that is under water.
- Step 4** Hold a piece of white paper above the torch.

What can you see?

What other objects can we use to reflect light to make a rainbow of colours?

## Make a musical instrument

### Making a musical instrument

Let's learn to make a music shaker. It is a handheld musical instrument and is easy to make.

**You will need:**

- a plastic bottle
- some rice

**Follow these simple steps:**

- Step 1:** Open the bottle. Pour out all the liquid. Clean the bottle. Allow the bottle to dry for several hours.
- Step 2:** Put the rice into the bottle.
- Step 3:** Screw the lid back on.

You can replace rice with other small objects, such as beans, beads and pasta. Note how different objects create different sounds.

Is the sound different if we put more rice in the shaker?

You can decorate the shaker with ribbons, craft paper, stickers, etc. Hold the top of the bottle and shake it. Can you feel the vibrations on the bottle? Can you hear the sound?

## Learn about charts and survey reports

**Next Stop Magazine** A magazine in your neighbourhood

### A SURVEY REPORT—November

*This month, we want to find out more about different means of transport.*

#### Do you like going around by tram? Why?

Why do you like going around by tram?	Number of people (smiley faces)
fun	12
cheap	9
convenient	12
clean	9

☺ = 1 person

We have answers from 28 people living in this area. Do you want to know the top two reasons? Twelve people think it is fun to go around **by tram**. Nine of them think it is cheap to take a tram.


# All-around STEAM support

Activity worksheets and PowerPoint presentations to guide students to complete the tasks step by step

**Activity sheet**

**Do an experiment using natural dyes**


**Things you need**




a white towel (cotton)




a clean pot




a basin



salt




a box of blueberries



a pair of wooden chopsticks

**Things to do**


- 

Pour 500 ml water into the pot. The water should be just enough to cover the towel. Put the towel into the pot and heat it up.

**PowerPoint slides**


Reading & STEAM activity

**Read and do an experiment using natural dyes**




**What was used to dye people's clothes?**

Nowadays, our clothes are mainly dyed with chemical dyes. Some chemical dyes may cause irritation to our skin. The chemicals may pollute air and water too.




**What was used to dye people's clothes?**




In the past, people dyed their clothes with natural ingredients. Did you know that many fruit and vegetables can be used as natural dyes?


**Natural dyes and their colours**

Can you guess what colours these natural ingredients produce?





Orange






Purple





Blue





**Teaching steps**

- Ask students to read the text in the STREAM Pack. Check their understanding by asking questions.
  - 1 T:** How did people dye their clothes in the past?
  - S:** They used natural ingredients.
  - 2 T:** Can you name some plants which we can use as natural dyes?
  - S:** (Any plants from the table on page 2)
  - 3 T:** What colour can we get when we dye with black grapes?
  - S:** Blue.
- Explain the disadvantages of chemical dyes, including irritation to skin and possible damage to the environment. Point out that we can use many natural ingredients as natural dyes. Show the examples in the PowerPoint (Slide 3). Ask students to guess what colours the natural ingredients can produce.
- Show the instructions on how to do an experiment using natural dyes in the STREAM Pack.
- Go through the ingredients and the tools for the dyeing experiment with students. Remind them we have to use a cotton towel because the colour stays better on natural fibres (e.g. cotton). Guide students to find out the material in the laundry symbol attached to the towel (if any).
- Let students know that boiling the towel with salt or white vinegar before dyeing can help the colour stay better on the towel.
- Prepare all the necessary materials for doing the dyeing experiment.

**Resources and notes**

STREAM Pack P5, pp. 1-2  
PowerPoint

STREAM Pack P5, pp. 3-4

Teaching notes to give teachers support on STEAM ideas and activities



Additional online resources to encourage self-directed learning