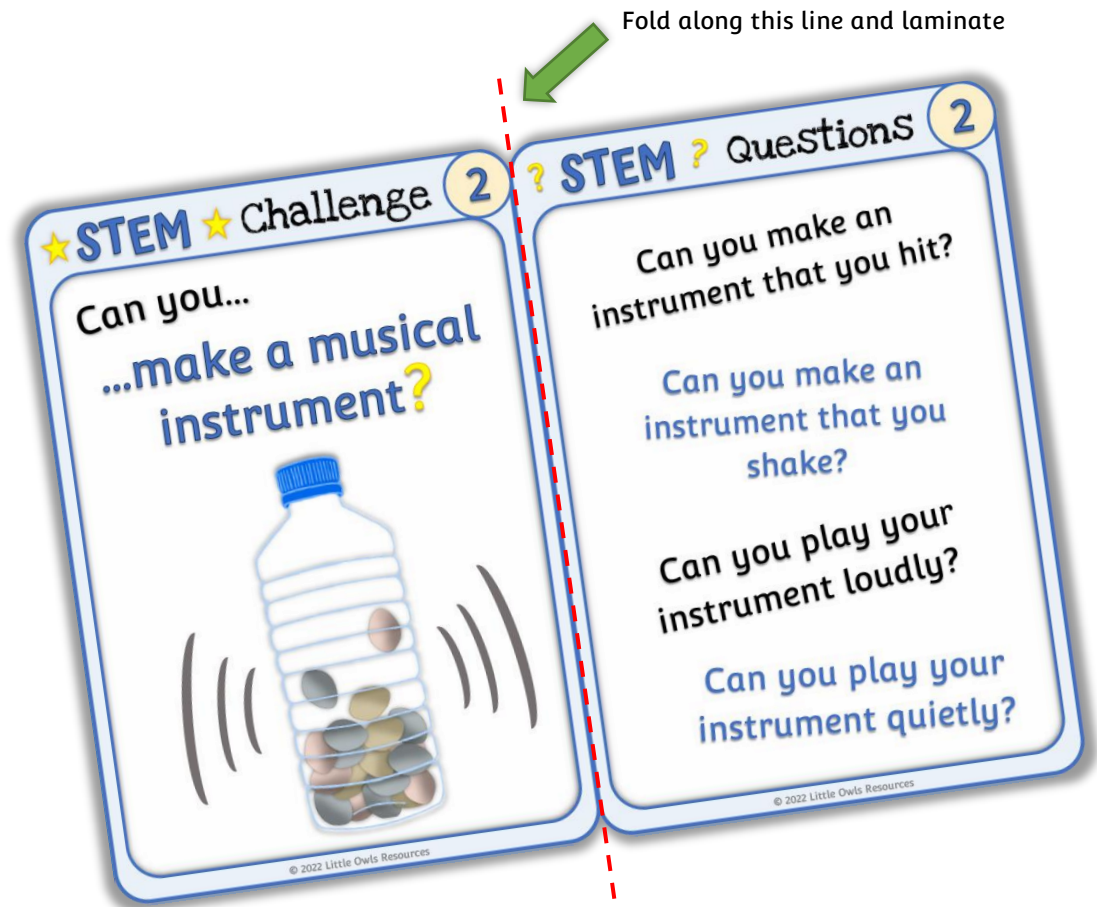


STEM Challenge cards

These cards are to be used as prompts for a **STEM** session.

(**S**cience **T**echnology **E**ngineering and **M**athematics)

The challenges are intended to be open ended and non-specific to encourage independent thinking in the children.



★ STEM ★ Challenge 1

Can you...
...**make a shadow?**



? STEM ? Questions 1

Can you make the shadow bigger?

Can you make the shadow smaller?

Can you make different shadow shapes?

What happens when you move the light?

★ STEM ★ Challenge 2

Can you...

...make a musical instrument?



? STEM ? Questions 2

Can you make an instrument that you hit?

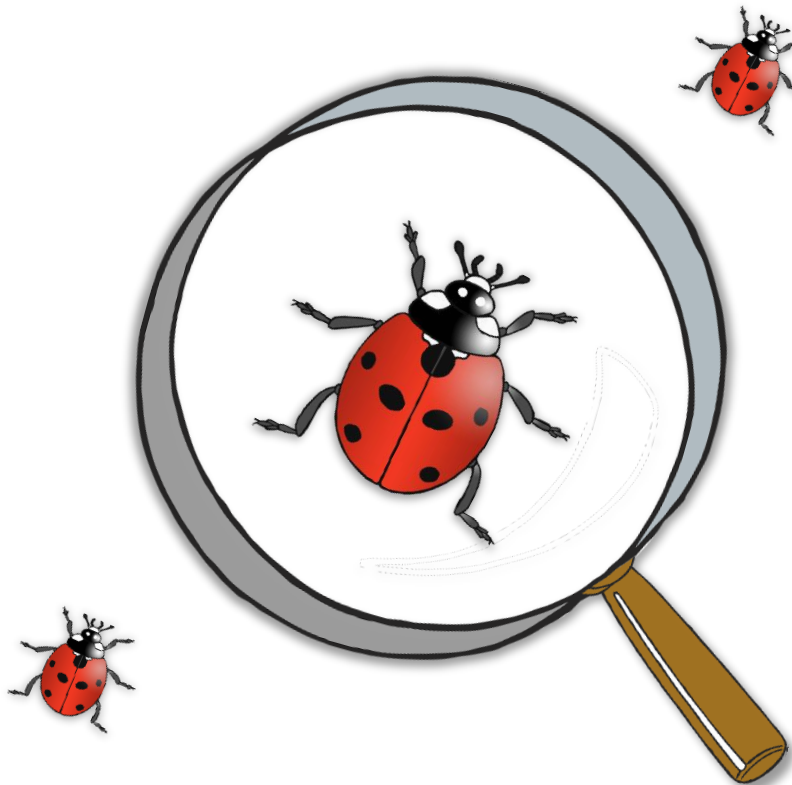
Can you make an instrument that you shake?

Can you play your instrument loudly?

Can you play your instrument quietly?

★ STEM ★ Challenge 3

Can you...
...investigate
minibeasts outdoors?



? STEM ? Questions 3

Can you find a
minibeast?

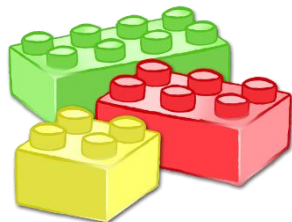
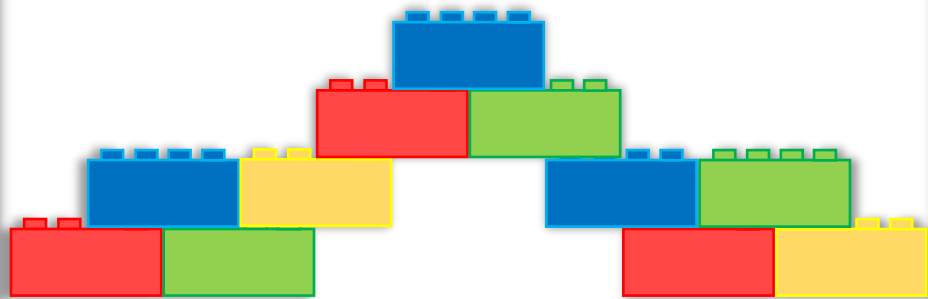
*How many legs does
it have?*

What is the minibeast
doing?

*How is it different
from other minibeasts?*

★ STEM ★ Challenge 4

Can you...
...build a bridge?



? STEM ? Questions 4

What is your bridge made from?

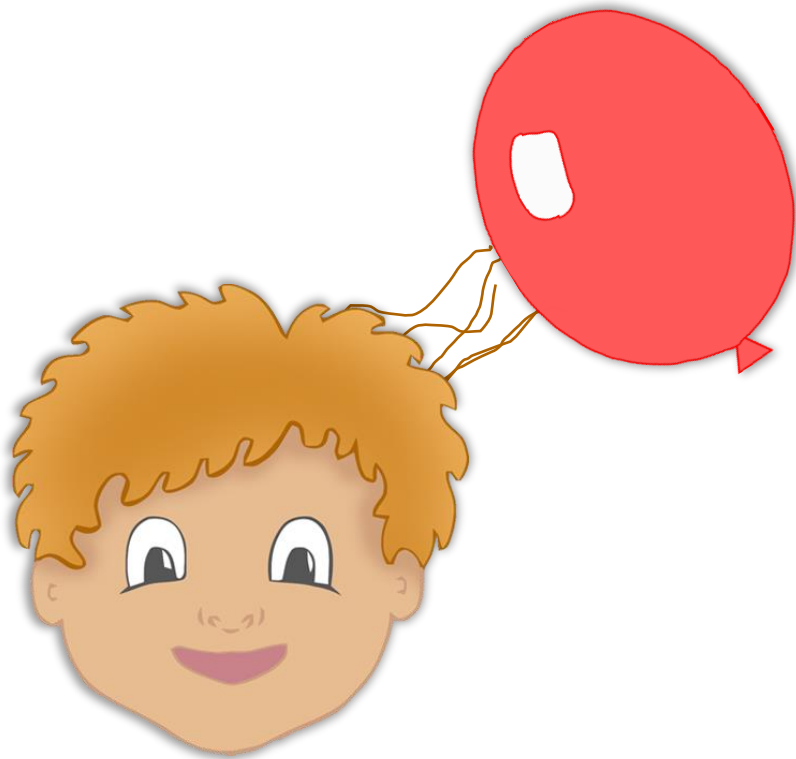
What other materials could you have used?

Can you test how strong your bridge is?

Would your bridge still work if it was bigger?

★ STEM ★ Challenge 5

Can you...
...investigate static
electricity?



? STEM ? Questions 5

Can you describe how
the static electricity
feels?

What happens if you rub
the balloon on different
materials?

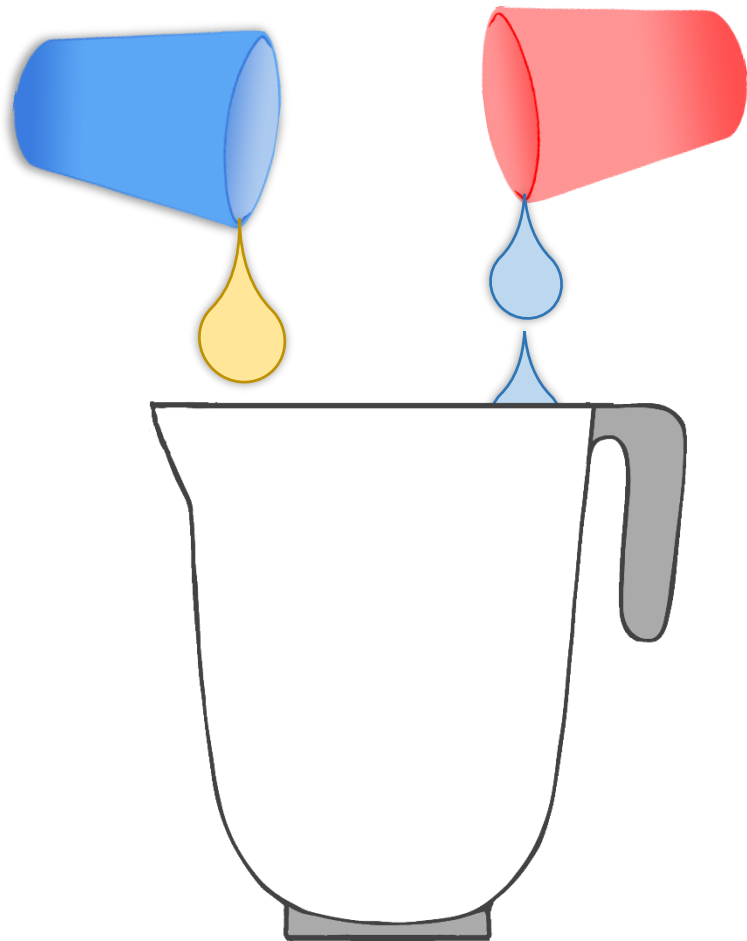
Does the size of the balloon
make any difference?

Can you move anything
using the static electricity?

★ STEM ★ Challenge 6

Can you...

...mix oil and water?



? STEM ? Questions 6

What happens when you try to mix the oil and the water?

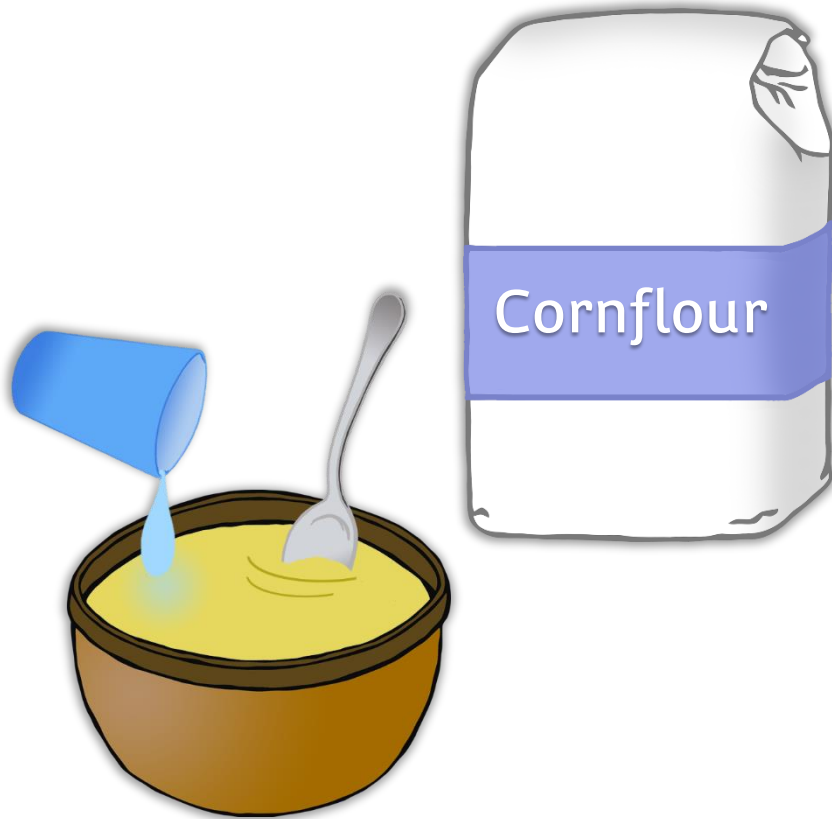
Does it make a difference if the oil or water is put in first?

Can you add a third liquid?

★ STEM ★ Challenge 7

Can you...

...make oobleck?



? STEM ? Questions 7

What happens when you put your hand in the oobleck slowly?

What happens when you put your hand in the oobleck quickly?

Try mixing the oobleck slowly and quickly. What do you notice?

★ STEM ★ Challenge 8

Can you...

...build a ramp for toy cars
(to go down safely)?



? STEM ? Questions 8

What happens if the
ramp is a steeper slope?

What happens if the ramp
is a gentler slope?

Does the type of car
make a difference?

Why does the car
move?

★ STEM ★ Challenge 9

Can you...
...build a home for one
of your toys?



? STEM ? Questions 9

What kind of home is
right for your toy?

*What materials do
you need?*

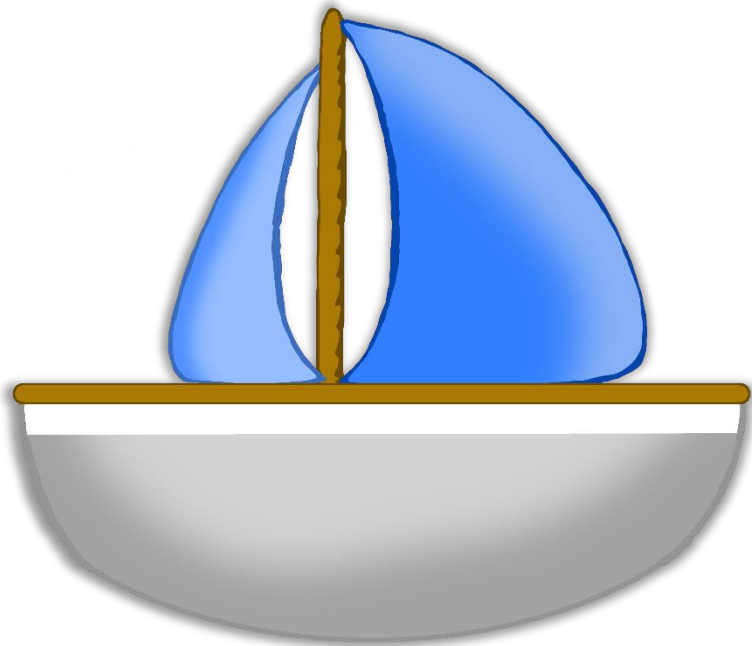
How will you stick the
materials together?

*How big does it
need to be?*

★ **STEM** ★ Challenge **10**

Can you...

...**build a boat
that floats?**



? **STEM** ? Questions **10**

What shape is best for
your boat?

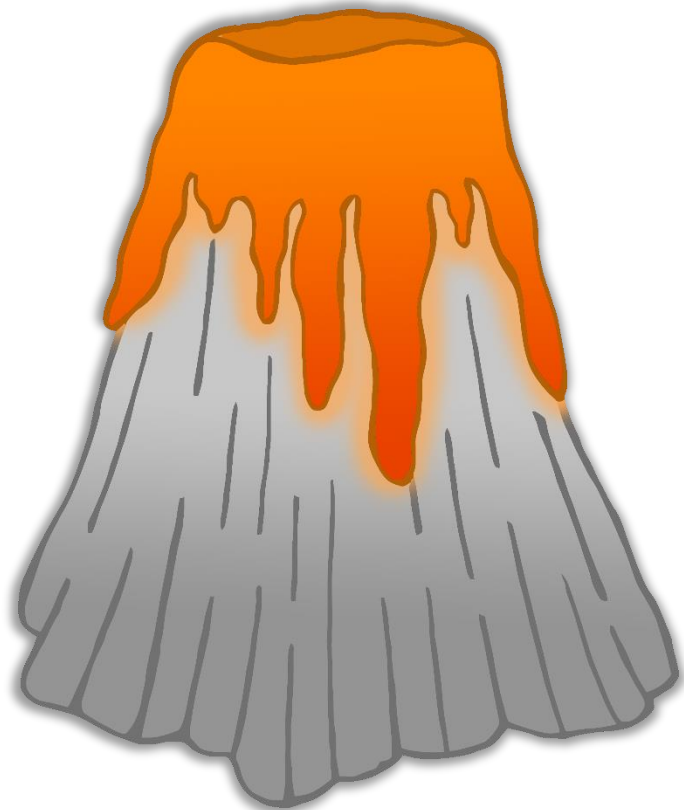
*What materials do
you need?*

How will you stick the
materials together?

*Is your boat strong
enough to carry a toy?*

★ **STEM** ★ Challenge 11

Can you...
...**build a volcano?**



? **STEM** ? Questions 11

What is your volcano
going to be made from?

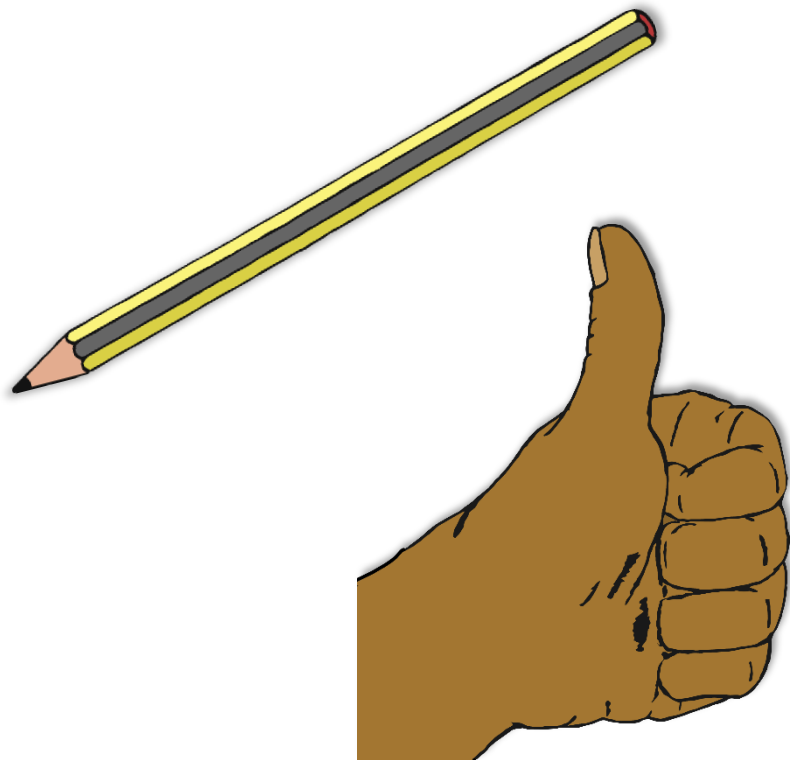
*How can we make sure
this experiment is safe?*

What colour could the
lava be?

★ STEM ★ Challenge 12

Can you...

...design and build
something useful?



? STEM ? Questions 12

What would be useful
to you or your setting?

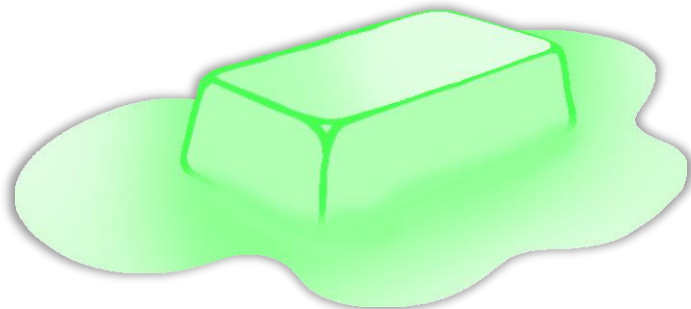
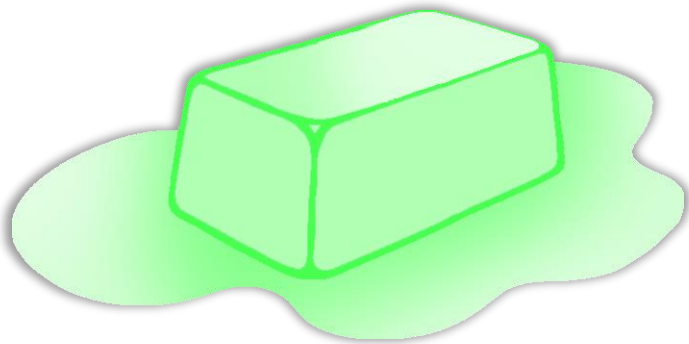
Can you draw your
idea?

What materials do
you need?

How will you stick the
materials together?

★ STEM ★ Challenge 13

Can you...
...make something melt?



? STEM ? Questions 13

How would you melt
an ice cube?

How would you melt a
piece of chocolate?

What is happening as it
melts?

★ STEM ★ Challenge 14

Can you...

...work out what season it is by exploring outside?



? STEM ? Questions 14

Are there leaves on the trees? What colour are they?

Is it cold? Do you need a coat?

Is the ground wet and muddy or dry and hard?

What else do you notice?

★ STEM ★ Challenge ★

Can you...

? STEM ? Questions ?