

Key Stage 2 Key Stage 3

Links with National Curriculum - Sc2 Movement, Sc4 Forces and Motion. The Earth and beyond

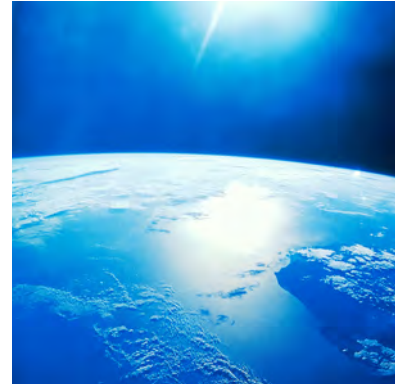
Links with QCA - 4E Friction, 6E Forces in action

FORCES IN THE UNIVERSE TRAIL

Name

School

Date

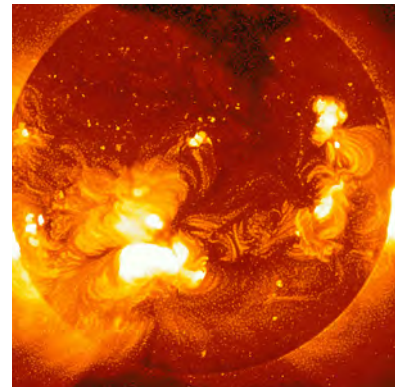
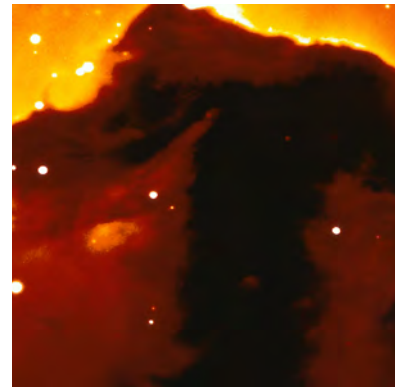


Look in the Into Space gallery

Find the "Living without up or down" board

Question 1.

Write down three things you might find hard to do in space? (Remember there is no gravity to pull things down)



Question 2.

What happens when astronauts play tug of war in space?

(Hint use the touch screen in micro gravity part of the gallery to help you)



Question 3.

Is this the same or different to what would happen on Earth?

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Question 4.

What affect does weightlessness have on astronaut's legs in space?

(Find the display titled the effects of weightlessness and circle the correct answer)

The bones waste away as they have nothing to support

The bones in the legs expand making you taller

The bones become much stronger

Question 5.

How is the way astronauts exercise in space different to how we do on earth?

Why?

Question 6.

How does a rocket use forces to take off?

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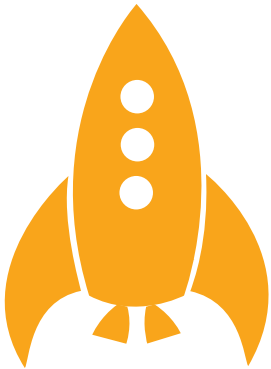
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FORCES IN THE UNIVERSE TRAIL

Question 7.

Can you label the arrows with the forces acting on the rocket?

Use the words in the box to help you.



gravity pull push
twist friction up
thrust drag friction
Force down spin
turn air-resistance

Question 8.

Have you tried the water rockets in the rocket tower yet?

What forces are acting on them?

Look in The Planets gallery

Question 9.

In the planets gallery look at the probe in the Venus exhibition.

Why is it squashed?

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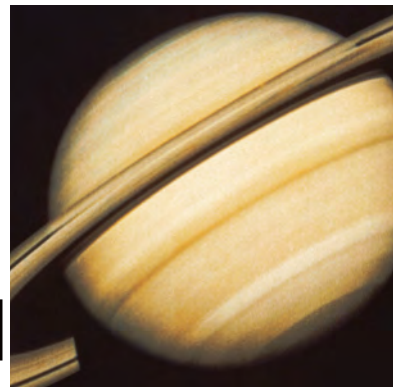
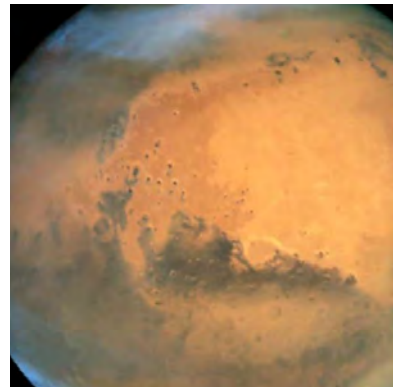
Question 10.

Can you find Saturn in a bath tub, why is it here?



Question 11.

Can you label the planets below by writing their name inside them?



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Question 12.

Look in the planets gallery to find out more facts about each planet and their gravity to fill in the table below (*circle your answer*)

Look at the baked bean exhibit for gravity information.

Planet	gravity compared to Earth			How many moons?				
	lighter	heavier	same	1	2	3	4	more
Mercury	lighter	heavier	same	1	2	3	4	more
Venus	lighter	heavier	same	1	2	3	4	more
Earth	lighter	heavier	same	1	2	3	4	more
Mars	lighter	heavier	same	1	2	3	4	more
Jupiter	lighter	heavier	same	1	2	3	4	more
Saturn	lighter	heavier	same	1	2	3	4	more
Uranus	lighter	heavier	same	1	2	3	4	more
Neptune	lighter	heavier	same	1	2	3	4	more

Exploring the Universe Gallery

Question 13

Use the gravity well.

How many times can you get the ball to go around the well?

Question 14.

What do you notice about the speed of the ball?

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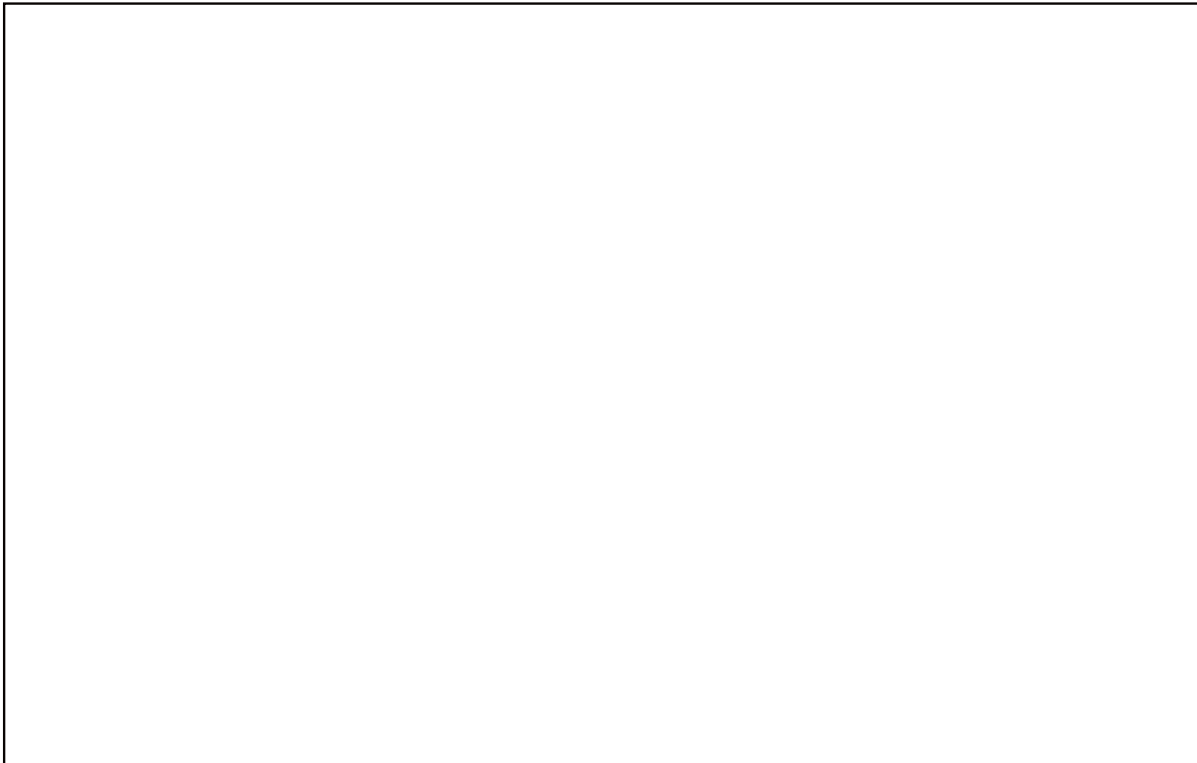
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Question 15.

In the Space now gallery find out how friction might affect an object from outer space entering our atmosphere. Find the Space Shuttle tile
These tiles had to withstand the extreme temperatures and high re-entry temperatures due to friction and ram pressure. What temperatures can be reached on the outside of the Space Shuttle?



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