



Falling stars

Looking at the stars

time

45 minutes

learning outcomes

To:

- know that a falling star is a piece of stone that leaves a trail of heat and light caused by friction
- know that a star gives off light

materials needed

- 24 flints
- colouring pencils

Tip. Lesson 24 is about meteorites and can be combined with this lesson.

Preparation

For the activity **Light through friction** you will need one flint for each child.



Falling stars 15 min.

Sit in a circle with the children. Show them the drawing of the falling star in Task 1 of the worksheet. Ask them what they think it is. Explain to them that we call it a falling star, but that it is not really a star at all. It is a falling stone! Now show them the photograph of the falling star. What can they see now? Do they suggest the words 'light', 'fire' or 'star'? Explain that all kinds of different sized stones are floating around in space. Sometimes these stones move in the direction of our planet. They move at such a speed that they become very hot. So hot that they catch fire! That is why you see a fiery stripe in the sky: the stone is burning up.

Encourage the children to complete Task 1 on the worksheet by drawing a real falling star.



The children investigate how a falling star produces heat and light.



Heat caused by friction 5 min.

Instruct the children to rub their hands together very fast. Now they should complete Task 2 on the worksheet.

Good to know. Sometimes a stone is so big that it does not completely burn up in the atmosphere. The remaining piece falls to the ground, sometimes breaking into smaller fragments. We call this a meteorite.

Light caused by friction 10 min.

A falling star also produces light. Organise the children in pairs and take them outside to the playground. Explain to them that they must take care when doing the following activity! Give each pair of children two flints. Encourage them to make sparks by hitting the two flints together. Then the children return to the classroom and complete Task 3 on the worksheet.



What is a falling star? 10 min.

Discuss the following questions with the children: What did they feel when they rubbed their hands together? What did they see when they hit the flints together? What made the flints produce light? Explain to them that the warmth of their hands and the light produced by the flints were both the result of friction. Explain that friction is the force produced when two objects rub against each other.



Ask the children once again what falling stars are. How are falling stars created? Why do they give off light? Explain that the stone flies through the air at such a speed that it gets very hot and catches fire. The same thing happened when the children rubbed their hands together and used the flints to make sparks. Only in the case of falling stars there is a lot more friction and a lot more fire. Ask the children whether they think falling stars are something to be afraid of. Explain to them that this is not the case. There are lots of stones drifting about in space around the earth, but because they burn up in the atmosphere, usually they do not reach us on the ground. Occasionally they do reach the ground, but this happens so rarely that the children need not be frightened.



What are stars? 5 min.

Now the children know that a falling star is not really a star at all. But what is a real star? Explain to them that there are lots and lots of stars. Ask the children if they have ever seen stars in the sky at night. What did they notice about them? Explain that stars shine all the time, not just for a short time like falling stars.



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discussion sheet





Falling stars

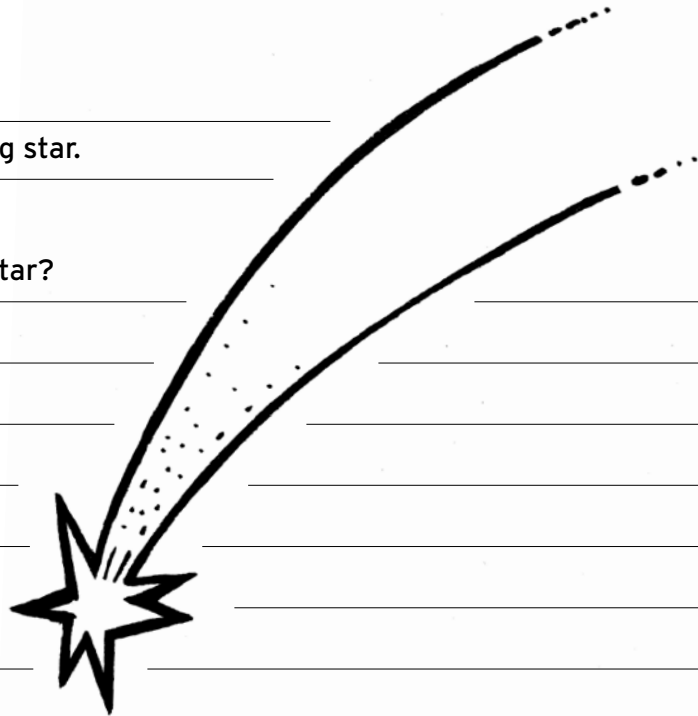
1 Falling stars



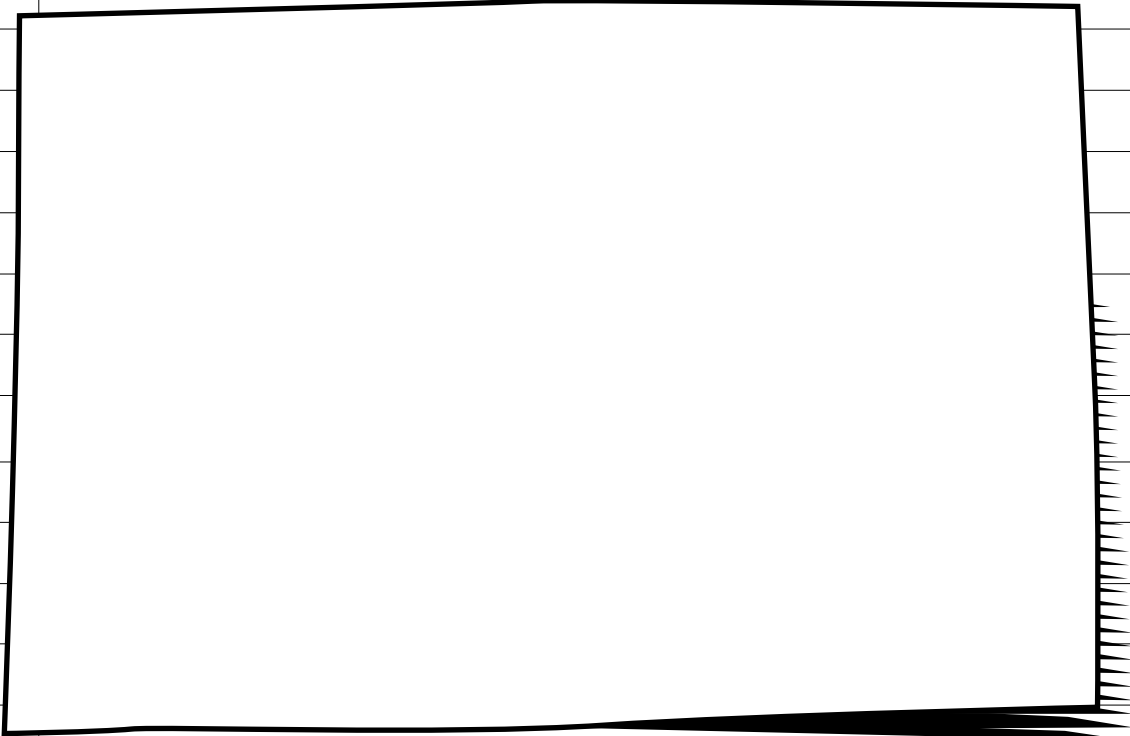
Here you can see a falling star.

a Is a falling star really a star?

yes / no



b Draw a real falling star.



2 Heat caused by friction



Rub your hands together.

What happens?

Tick the correct box.

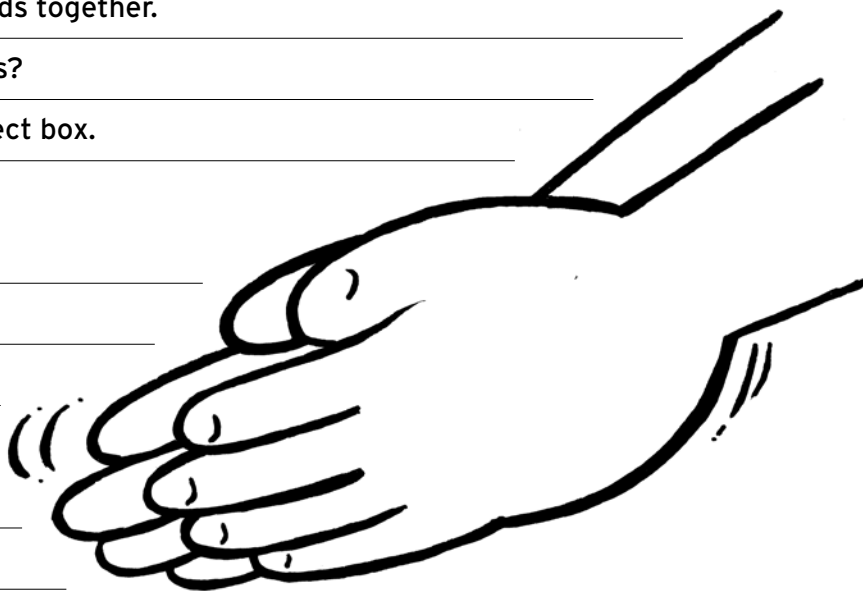
a

They get:



☐ hot

☐ cold



3 Light caused by friction



1 Make a spark using a flint.

What happens?

Tick the correct box.

a

You see:



☐ a falling star

☐ light

☐ heat

