BLACKROCK CASTLE OBSERVATORY
THE SPACE FOR SCIENCE

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SPACE WEEK
Our Planet · Our Space · Our Time

Classroom Resource Booklet

Mars

Discover Primary Science and maths
www.primaryscience.ie

www.spaceweek.ie

BACKGROUND INFORMATION

Why Mars?

Mars is similar yet different to the Earth.
The differences help to highlight what is special about our planet.
If humans were to live anywhere else in the solar system, Mars would be the best option.

Background Information for Teachers:

Useful facts about Mars:

- Mars is half the size of the Earth.
- Mars is covered with rocks and sand.
- There are no oceans or lakes on Mars, so there is more land surface than on Earth.
- The surface of Mars is red. This is thought to be due to iron oxide in the soil.

  BUT: A more recent theory is that the red colour could have formed without water.
  Scientists performed an experiment where they gently tumbled grains of quartz for a few months until they were turned into a fine powder. This is like a wind flowing over the Martian surface.
  Then, they added powdered magnetite and the sand turned redder.
  This gives a way that an iron oxide could have formed without water at all.
- Mars is generally cold, but ground temperature varies from the Equator to the Poles.
  See this article: Temperature and Wind chill on Mars:
  http://www.sciencemag.org/news/2014/06/no-wind-chill-Mars

Resources:

- Photos of Mars:
  https://www.flickr.com/photos/esa_Marswebcam
  from the Mars Express:
  http://sci.esa.int/Mars-express/
- Red Planet Report:
  http://redplanet.asu.edu
- Imagine Mars:
  http://Mars.nasa.gov/imagine/students/

Mars Mission Background Information:

- Mars Express: http://sci.esa.int/Mars-express/
- ExoMars: http://exploration.esa.int/Mars/46124-mission-overview/
- MarsQuest: https://www.Marsquestonline.org

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DPSM/ESERO Framework for Inquiry

THEME	Overall theme	
CURRICULUM	Strand:	
	Strand Unit:	
	Curriculum Objectives:	
	Skills Development:	

ENGAGE

THE TRIGGER	WONDERING	EXPLORING

INVESTIGATE

STARTER QUESTION	PREDICTING	CONDUCTING THE INVESTIGATION	SHARING: INTERPRETING THE DATA / RESULTS

TAKE THE NEXT STEP

APPLYING LEARNING	MAKING CONNECTIONS	THOUGHTFUL ACTIONS

REFLECTION	

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DPSM/ESERO Framework for Inquiry

THEME	Overall theme	
CURRICULUM	Strand:	Use the DPSM Planning Guide to identify the strand/strand units and the appropriate curriculum/learning objectives that your pupils should achieve.
	Strand Unit:	
	Curriculum Objectives:	
	Skills Development:	

ENGAGE

THE TRIGGER	WONDERING	EXPLORING
• Relating the new experience to the children. • Using objects (e.g. torch for simple circuits, sycamore seeds for spinners etc.). • Play with toys, objects (e.g. magnets). • Use DVD clips, digital images of the scientific phenomenon. • Story. • The mystery box. • A mystery demonstration.	• Discuss everyday experiences. • Concept mapping. • Concept cartoons. • Think and draw. • Question and answer session. • Free writing. • Brainstorming. • Manipulation of materials. • Newspaper article (fictional/actual). • The science talk ball.	• The Invitation to learn. • New experience presented to the children. • The children discuss this and try to provide explanation. • Teacher identifies children's 'alternative ideas'. • Children's questions about the exploration provides them with opportunities to explore the phenomenon.

INVESTIGATE

STARTER QUESTION	PREDICTING	CONDUCTING THE INVESTIGATION	SHARING: INTERPRETING THE DATA / RESULTS
• Starter question for investigation. Teacher or children pose the question/ scenario/present the problem to be investigated.	• Children record predictions and provide reasons for their predictions.	• In groups the children design, plan and conduct inquiry. • Collect and organise data.	• Children interpret and discuss their results. • Present their findings: Propose explanations and solutions based on the data. • Drawing conclusions.

TAKE THE NEXT STEP

APPLYING LEARNING	MAKING CONNECTIONS	THOUGHTFUL ACTIONS

- Discuss implications of their findings e.g. bigger spinner falls more slowly than smaller one. Therefore if I was to jump out of a plane I would choose a bigger parachute as it would fall more slowly.
- Debating.
- Making connections.
- Apply their knowledge to a new learning situation.
- Consider how to extend their new understanding and skills - further exploration, address new questions.

REFLECTION	
	• Did I meet my learning objectives? • Are the children moving on with their science skills? • Are there cross curriculum opportunities here? • What questions worked very well? • What questions didn't work well? • Ask the children would they change anything or do anything differently.

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DPSM/ESERO Framework for Inquiry

THEME	Mars: Junior Activities	
CURRICULUM	Strand:	Living things. Materials. Environmental awareness and care.
	Strand Unit:	Plants and animals. Properties and characteristics of materials. Caring for my locality.
	Curriculum Objectives:	Observe, discuss and identify a variety of plants and animals in different habitats. Investigate materials for different properties. Identify, discuss and appreciate the attributes and features of the local environment.
	Skills Development:	Questioning, observing, investigating and experimenting, recording and communicating.

ENGAGE

THE TRIGGER	WONDERING	EXPLORING
• The challenge is for you to design a Martian—a life-form capable of surviving on Mars!	• What is it like on Mars? • How are animals that live in very cold or very hot places different from each other? • Is Mars hot or cold?	• Use the activities to discover more about conditions on Mars. • Activities focus on the Martian Landscape. • Examine images of Mars from various landers. • Observe Mars in the night sky – it is red. • Explore Mars with Google Mars (from Google Earth). • Use various modelling materials.

INVESTIGATION 1: DESIGN A MARTIAN

STARTER QUESTION	PREDICTING	CONDUCTING THE INVESTIGATION	SHARING: INTERPRETING THE DATA / RESULTS
• What would a Martian look like?	• Sketch or draw a Martian.	• Then make your Martian using 3-D materials.	• Maths Extension for Infants: Use the made Martians for early number work, sorting and classifying.

INVESTIGATION 2: MARTIAN LANDSCAPE

STARTER QUESTION	PREDICTING	CONDUCTING THE INVESTIGATION	SHARING: INTERPRETING THE DATA / RESULTS
• What is the best material to make a Martian landscape? *or* • How similar can I make my landscape to the actual Martian landscape?		• Create a model landscape, Paint as needed.	• Display the created Martian Landscapes, compare to actual images. • Compare landscapes - which has the biggest mountain? Which has the roughest terrain?

TAKE THE NEXT STEP

APPLYING LEARNING	MAKING CONNECTIONS	THOUGHTFUL ACTIONS

- Use information gained from the Martian landscape activity to redesign Martian Life.
- How are animals on Earth adapted to move around in sandy / rocky areas?
- Animals in the Cold: http://esero.ie/wp-content/uploads/2015/01/07_Animals-in-the-cold.pdf
- Could humans ever live on Mars? What would they need to take with them?
- How could you describe the Earth to an alien? http://esero.ie/wp-content/uploads/2015/01/05_Where-do-you-live.pdf

REFLECTION	• Did I meet my learning objectives? • What went well, what would I change?

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DPSM/ESERO Framework for Inquiry

THEME	Mars: Senior Activities	
CURRICULUM	Strand:	Living things. Materials. Environmental awareness and care.
	Strand Unit:	Plants and animals. Properties and characteristics of materials. Environmental awareness.
	Curriculum Objectives:	Recognise that there is a great diversity of plants and animals in different regions and environments. Investigate the effects of air and water on materials Rusting (5th/6th class), treat as an introduction to materials that change for younger classes. Investigate materials for different properties. Identify, discuss and appreciate attributes / features of local environment
	Skills Development:	Questioning, observing, investigating and experimenting, recording and communicating.

ENGAGE

THE TRIGGER	WONDERING	EXPLORING
• Would you volunteer to be on the first human mission to Mars? What would you need to know about Mars before you went? *or* • Mars in the media: how is Mars depicted in films like the Martian or Mars Attacks or in maps? https://childrensmaps.wordpress.com/Mars-wind-ice-and-dust/	• Does Mars have the conditions necessary for human survival? • What are the characteristics that make a planet habitable for humans? • What is the surface of Mars like? • Look at images of Mars from Google Mars, Mars Express: http://www.esa.int/Education/Images_from_Mars_Express or from Planet Four https://www.planetfour.org	• Use the activities to discover more about conditions on Mars. Activities focus on: • Why Mars is Red • How Martian Canals Formed. • Handle the physical materials used in each investigation.

INVESTIGATION 1: WHY IS MARS RED?

STARTER QUESTION	PREDICTING	CONDUCTING THE INVESTIGATION	SHARING: INTERPRETING THE DATA / RESULTS
• Does the amount of water / sand / steel wool make a difference to how red the sand (Mars) becomes?	• Prediction will depend on student knowledge, ie. "I know that steel wool goes rusty when it gets wet, so I think as long as there is some water, then the steel wool will go rusty."	• Draw / take pictures of how rusty the mixture becomes each day. • Maths Extension: try to quantify the amount of rust.	• Compare rusting results between groups. • Compare rusting results each day. • Draw a chart to show how rust quantity changed with time/ other variable. • Compare results to prediction.

INVESTIGATION 2: HOW MARTIAN CANALS FORMED

STARTER QUESTION	PREDICTING	CONDUCTING THE INVESTIGATION	SHARING: INTERPRETING THE DATA / RESULTS
• How did the canals on Mars form? *or* • Are canals formed naturally from water the same as artificial canals?	• Sketch how you think a canal would look if formed from water	• Make canals in plaster of Paris, using water and tools.	• Compare the different canals. Which look most like the canals found on Mars? • Are Martian canals naturally formed?

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DPSM/ESERO Framework for Inquiry

TAKE THE NEXT STEP		
APPLYING LEARNING	MAKING CONNECTIONS	THOUGHTFUL ACTIONS

- How do we find water on Mars?
- Would Mars be red under the surface?
- How could we land on Mars? see ESERO 80: A Soft Landing: http://esero.ie/wp-content/uploads/2015/01/80_A-soft-landing.pdf
- Life on Other Planets, see ESERO 59: http://esero.ie/wp-content/uploads/2015/01/59_Life-on-other-planets.pdf
- How Can You Recognise Life? see ESERO 79 for 5th/6th classes http://esero.ie/wp-content/uploads/2015/01/79_How-can-you-recognise-life.pdf

REFLECTION	
	• Did I meet my learning objectives? • Are the children moving on with their science skills? • Are there cross curriculum opportunities here? • What questions worked very well? • What questions didn't work well? • Ask the children would they change anything or do anything differently

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INVESTIGATION 1 FOR JUNIOR CLASSES: DESIGN A MARTIAN

Skills:

Working scientifically: questioning, observing, predicting, estimating and measuring.

Class level:

Junior

Content Strands:

- Science: Materials: properties and characteristics.
- Maths: Numbers:
  Counting, comparing (e.g. longer)/
  Data: representing and recording data/
- Skills: Observing Sorting Classifying

Background Information:

- Life comes in many different forms. Life on other planets may be wildly different from life found on Earth. So far, we haven't discovered life on any other planet, although robotic rovers are exploring Mars, looking for signs of water.

Trigger questions:

- What might an alien look like?
- How are animals adapted for places that are very cold or very warm? (Polar bears have thick fur)
- Are other planets the same as the Earth? (Some planets are closer to the Sun, some are bigger or smaller. So conditions on those planets are different to Earth.)

Materials:

- Modelling materials.

Activity:

1. Children make a 3-D alien from a modelling material.

2. Ask children to sort the aliens into families. This can be on the basis of observable features and children can be asked "Why are these aliens in the same family? Are they both blue, have three eyes, etc"

Adapted from: Design Your Alien, UNAWE

Some Martians made by children at Blackrock Castle Observatory

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INVESTIGATION 2 FOR JUNIOR CLASSES: MARTIAN LANDSCAPE

Skills:

Designing and making.

Time:

35 & 30 minutes, spread across 2 days.

Learning outcomes:

To know that:

- There are rocks on the planet's surface.
- There is a large mountain on Mars.
- The soil on Mars is reddish brown.
- There are no plants or trees on Mars.
- The surface of Mars looks very different than the surface of the Earth.

Preparation

- For the activity Mars you will need the photograph of the Martian landscape, Olympus Mons and the Earth's landscape (See the end of this booklet).

Materials:

- A Photograph of the Martian landscape.
- A Photograph of Earth's landscape.
- A Photograph of Olympus Mons.
- Self-hardening white modelling clay or modelling paper such as papier-mâché [optional: gravel and stones].
- Brushes.
- Red and brown paint.

End product:

- A clay or paper-mâché model of a Martian landscape.

Activity:

Mars: 15 min.

Sit in a circle with the children and ask if they have ever heard of the planet Mars. Show the children the photograph of the Martian landscape. Ask them what they can see in the photo. Do they see that the planet is reddish brown? That the surface is rocky and that there is a very big mountain? This mountain is a very high volcano called Olympus Mons and it is 25 kilometers high and about 624 kilometers wide.

Explain that the mountain is so wide that it would take you a whole afternoon to drive from one side to the other, the top of the mountain is 2.5 times higher than an aeroplane flies.

Show the photograph of the Earth's landscape. Ask the children what differences they can see between the two landscapes. Explain clearly that there are no plants, trees or grass growing on Mars, unlike the Earth where these things grow almost everywhere. The Martian landscape looks like a desert!

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INVESTIGATION 2 FOR JUNIOR CLASSES: MARTIAN LANDSCAPE

Activity:

Make the Martian Landscape: 20 min.

- Give each child a lump of clay or paper-mâché and encourage them to make the surface of Mars.
- Help the children to make the volcano and the rocks: gravel and stones can also be used.
- Label each landscape with the child's name and put them in a safe place to dry.
- Leave the clay to dry for one day.

Paint the Martian Landscape: 25 min.

- After a day the clay has dried to become hard and white.
- In real life the Martian landscape is a reddish brown, not white, so the children need to paint their landscapes.
- Give each child a paintbrush to paint their Martian landscape.

Mars and Earth: 5 min.

- Ask the children what they have learned about Mars.
- What differences do they know between Earth and Mars?
- Does the Earth have any mountains or volcanoes as high as on Mars?

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INVESTIGATION 1 FOR SENIOR CLASSES: WHY IS MARS RED?

Skills:

Working scientifically: Questioning, observing, predicting, investigating and experimenting, analysing, recording and communicating, evaluating.

Time:

25 & 20 minutes, spread across 2 lessons.

Learning outcomes:

To know that:

- The soil on the planet Mars contains iron.
- Rust is a result of iron reacting with oxygen (in the presence of water).
- The planet Mars is reddish-brown because the iron has turned to rust.

Tip:

The experiment will need to stand for three days and the children will need to be able look at it every day. So you need to start this lesson at the beginning of the week.

Materials:

- A Photograph of the Martian landscape.
- 12 containers (e.g. plastic dishes).
- 2 jugs of water.
- Soap-free steel wool (do not use stainless steel wool).
- Sand.
- Rusty nail.
- Colouring pencils.

Preparation

For the activity 'Mars' you will need the photograph of the Martian landscape (see the end of this booklet).

For the activity 'Why is Mars red?'

- Prepare 12 containers, each containing a shallow layer of sand.
- Pull the steel wool apart, so that the children can scatter the grains of sand between the fibres.
- You need to create a large surface area of steel wool. Reserve some sand for later in the experiment. You will need this to sprinkle over the top of the steel wool.
- Prepare the jugs of water.
- The children's research project will take three days.
- Take care when handling steel wool and rusty nails. Ensure the children avoid touching their eyes or mouths and wash their hands thoroughly at the end of this lesson.

End product:

- A container containing an imitation of the soil on Mars.

Activity:

Mars: 10 min.

Ask the pupils if they have heard of the planet Mars? Encourage them to tell the class what they know about this planet. If they mention Martians, explain that most people do not believe in Martians. There is no evidence of life on Mars. However, millions of years ago, conditions on Mars may have been very different and living things may have existed.

Ask the children if they know what colour Mars is. Show the photograph of the Martian landscape. Explain that the surface of Mars is reddish-brown. This is why Mars is known as the Red Planet.

Continued on the next page...

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INVESTIGATION 1 FOR SENIOR CLASSES: WHY IS MARS RED?

Activity:

Why is Mars red? 15 min.

Ask the children if they have ever seen reddish-brown spots on metal (for example on their bike handlebars). Where do these spots come from? What is it?

- Organise the children into pairs.
- Give each pair of children a container with sand. Also give them the steel wool, which has been pulled apart.
- Explain that the sand represents the soil on Mars.
- The children put the steel wool in the container.
- The bottom of the container needs to be completely covered in steel wool.
- The children scatter the sand in the container. They need to make sure the sand is well mixed in with the steel wool. Then the steel wool needs to be covered in sand.
- Go around the class with the water jugs and pour a little water into all the containers.
- The sand and the steel wool should be very damp, but there must not be a layer of water in the container.
- For Task 1 on the worksheet, the children draw and describe what their container looks like on Day 1.
- Leave the containers on display for the next few days.
- Encourage the children to look at their experiment every day and add water to the container to stop it drying out.
- Ask to record their findings for day 2 and 3 on the worksheet (next page).
- They need to pay special attention to the colour of the piece of soil.

Red: 10 min.

- After three days discuss the results of the experiment using Task 2 on the worksheet.
- What happened during the experiment? Did the sand turn red?
- Explain that the steel wool contains iron. This iron started to rust. The rust has turned the sand a reddish-brown colour, as if the grains of sand have been painted with rust. That is what happens on Mars as well.
- Explain that there is a lot of iron in the ground on Mars. That is why we see Mars as a red planet.
- Pass the rusty nail around the class, so that the children get an idea of what rust looks like on 'real' objects, and what it feels like. This will make it clear to them that rust occurs on the Earth as well as on the planet Mars.

What else rusts? 10 min.

Encourage the children to think of other things that can rust.

Show the children as many rusty objects as possible (for example parts of a bicycle).

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1 Why is Mars red?

day 1

describe HERE what the sand looks like

draw HERE what the sand looks like

day 2

describe HERE what the sand looks like

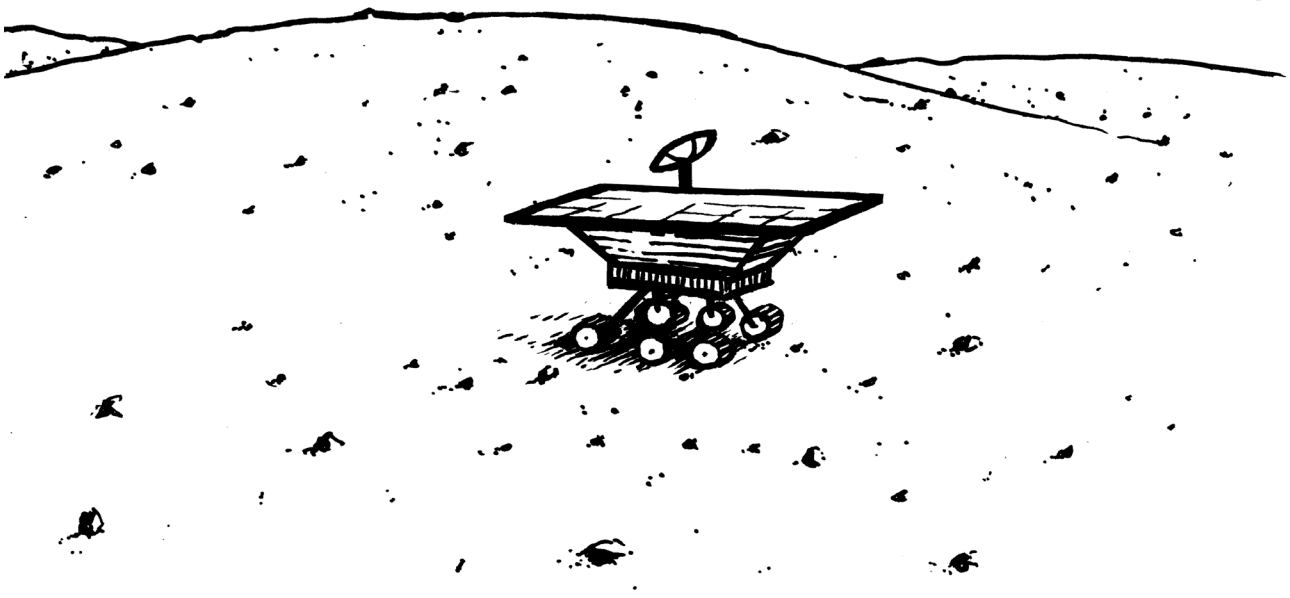
draw HERE what the sand looks like

day 3

describe what the sand looks like HERE

draw HERE what the sand looks like

2	Red
a	Why is the sand reddish-brown?
b	The soil on Mars is reddish-brown too. Why is that?



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INVESTIGATION 2 FOR SENIOR CLASSES: HOW MARTIAN CANALS FORMED

Skills:

Working scientifically: Observing, prediction, investigating and experimenting, analysing, recording and communicating, evaluating.

Time:

45 & 30 minutes, spread across 2 lessons.

Learning outcomes:

To:

- Know that a canal can be formed by water.
- See that canals formed by water are more rounded than canals dug by people or machines.

Materials:

- Photograph of Martian landscape.
- Photograph of Mars.
- Photograph of Martian canals.
- 12 materials containers.
- 24 small paper plates.
- 12 small and 12 larger containers.
- 12 plastic spoons.
- 12 wooden ice-lolly sticks.
- 12 bowls (to catch the water).
- 12 plastic cups.
- A4 paper.
- Plaster of Paris.
- Embroidery needles.
- Reddish-brown paint.
- Paintbrushes.

Preparation

For the activity 'What can you see on Mars?' you will need the photographs of the Martian landscape, Mars, and the Martian canals (see the end of this booklet).

For the activity 'Make a Martian canal', prepare 12 containers, filling them with the items listed below. Each should contain:

- Some plaster of Paris.
- A small container of water.
- An empty container to mix the plaster of Paris.
- A plastic cup.
- A wooden ice-lolly stick.
- An embroidery needle.
- Sand.
- 2x small paper plates.
- A bowl (to catch the water).

For the activity 'What is the difference?' the children will need the photograph of Mars from the Appendix. Make colour photocopies of this for the children.

End product:

- A piece of Mars with Martian canals

Activity:

What can you see on Mars? 15 min.

- Give each child a sheet of A4 paper and a pen.
- Show the children the photographs of the Martian landscape, Mars, and the Martian canals briefly one after the other.
- Then ask the children to record what they can remember of what they have seen.
- Encourage them to write and draw pictures.

Continued on the next page...

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INVESTIGATION 2 FOR SENIOR CLASSES: HOW MARTIAN CANALS FORMED

- Ask the children if they noticed any canals.
- Show the photograph of the Martian canals again.
- Explain to the children that experts think the canals on Mars were formed by liquid water which once flowed across the surface of the planet. The astronomer Giovanni Schiaparelli thought he could see dark, straight lines on Mars. He called these lines 'canali', which was translated as 'canals'. This suggested that the canals were artificial and that they had been dug by intelligent beings living on Mars. The American astronomer Percival Lowell in particular was convinced that the Martian canals were dug by Martians. We now know that this is not the case. The canals were probably created by running water.
- The children investigate how the canals on Mars may have come into being.

Make a Martian canal 30 min.

- The children work in pairs. Give each pair a container.
- Explain that they will be working with plaster of Paris and that this hardens very quickly. It is difficult to remove from your clothes etc once it is dry, so the children will need to work very carefully.
- The children follow the instructions in Task 1 on the worksheet.
- Make sure they wait around 20 minutes for the plaster to set before they use water or a spoon to make canals in their Martian landscape.
- This task is intended to investigate whether naturally formed canals look different from canals made by people.
- Assist the children where necessary with mixing the plaster and making the canals.
- When all the children have finished make sure their names are on their landscapes and put them in a safe place.
- Leave the plaster to dry for one day.

What is the difference? 15 min.

- The next day the children examine the two sorts of landscapes.
- They look at the difference between the canals made by a spoon and the canals made by running water.
- The children complete Task 2 on the worksheet.
- Distribute the coloured photocopies of Mars and encourage the children to use them to paint their own landscape reddish-brown.

What the scientists think? 15 min.

Discuss the worksheet and explain to the children that the scientists looked carefully to see if the canals could have been made artificially. Just like the children, the scientists carried out experiments to investigate this. The experts reached the conclusion that canals made by water have a different shape from canals made artificially. This is why experts today are convinced that water once flowed through the canals.

Show the children the photograph of the Martian landscape again. Explain that the canals may have been formed by the water washing the soil away, so that a channel is worn away in the ground.

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INVESTIGATION 2 FOR SENIOR CLASSES: HOW MARTIAN CANALS FORMED

1 Make a Martian canal

Your teacher will give you a container with the items you need for this experiment. Read the instructions carefully before you begin. The plaster sets very quickly.

What do you need to do?

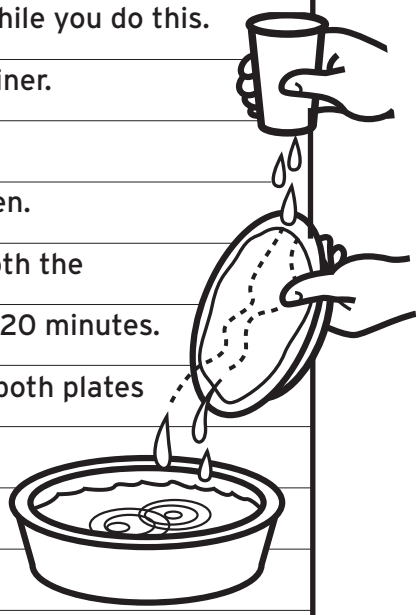
1 Take the plastic cup. Prick a hole in the bottom of the cup using the embroidery needle. Take care: don't hold your hand under the cup while you do this.

2 Put two spoonfuls of plaster powder in the empty container.

3 Now carefully pour on some water (not too much!). Use the spoon to stir the mixture until it starts to thicken.

4 Spread the plaster mixture onto two paper plates. Smooth the surface of the plaster using the back of the spoon. Wait 20 minutes.

5 Now the plaster should feel like clay. Be sure you make both plates at the same time. For the next step you should each choose one plate. This is so you can work more quickly.



6 <u>Plate 1:</u> Use a wooden ice-lolly stick to scratch some lines into the plaster on Plate 1. These are your artificial canals.

7 <u>Plate 2:</u> Hold plate 2 at an angle over the large drip bowl. Make sure the plaster doesn't run off the plate.

8 Take the plastic cup with a hole in the bottom. Cover the hole with your finger. Ask your partner to pour some water in the cup.

9 Take your finger off the hole and drip some water onto the plaster, starting at the top of the plate. Be sure to drip the water onto the same place for a little while before doing the same in another place. You will see canals being formed by the water. When you have made some canals you can put the cup down.

INVESTIGATION 2 FOR SENIOR CLASSES: HOW MARTIAN CANALS FORMED

Use the large drip bowl to catch the water as it runs off your plate.

Put down the plate when you are finished.

10 Leave the plaster plates to dry.

2 What's the difference?

You have now made two plaster landscapes. When they are dry examine both landscapes closely.

a What differences can you see?

b What do you think made these differences?

c Researchers have studied the surface of Mars.
They carried out similar experiments to the one you just did with the plaster.
Do you think that the canals on Mars were made by people,
like the astronomer Percival Lowell thought?

yes / no, because

CIRCLE the correct answer and write the explanation

d Have you finished the tasks? Paint your landscape reddish brown like the surface of Mars in the photograph. Does it look the same?

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Cross-curricular Links:

Mars

There are many opportunities to extend learning about Mars to other areas of the curriculum. Here are some suggestions:

Maths

- Weight: Calculate space weight, on Mars you would weigh 0.38 of what you weigh on Earth.
- Data: Who would want to go to Mars? Class survey and present results.
- Time: A Year on Mars is nearly 2 Earth years – how old would you be on Mars? A Martian Day is called a sol, it is 24 h and 40 m, how would this affect you if you had to keep Martian time while living on Earth?

PE

- Create a movement piece based on alien life. Walk or slither like an alien!

SESE Geography

- Compare Martian landscape to Earth landscape. Use Google maps of Mars to work out how far the Mars rovers have travelled.

SESE History

- Time line of Martian exploration – first spacecraft flyby of Mars was in 1965. Opportunity Rover has been exploring Mars since 2004.

Music

- Create an anthem for Mars.

Drama

- Act out the life of the crew of the first Mars Mission. How would they survive together for the year it would take to get to Mars?

Art

- Design a Mars mission patch (like a badge).

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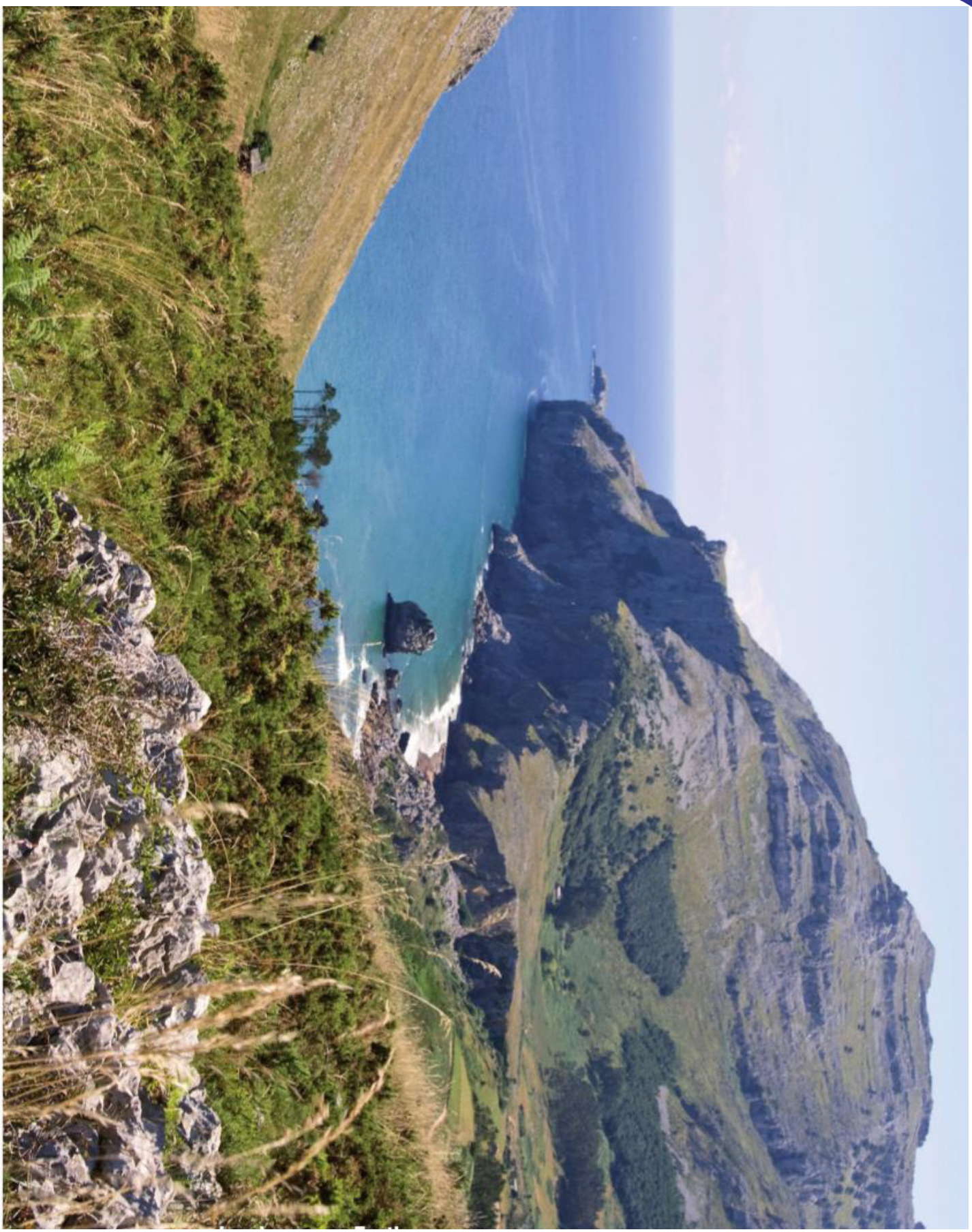
EARTH LANDSCAPE



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MARTIAN LANDSCAPE

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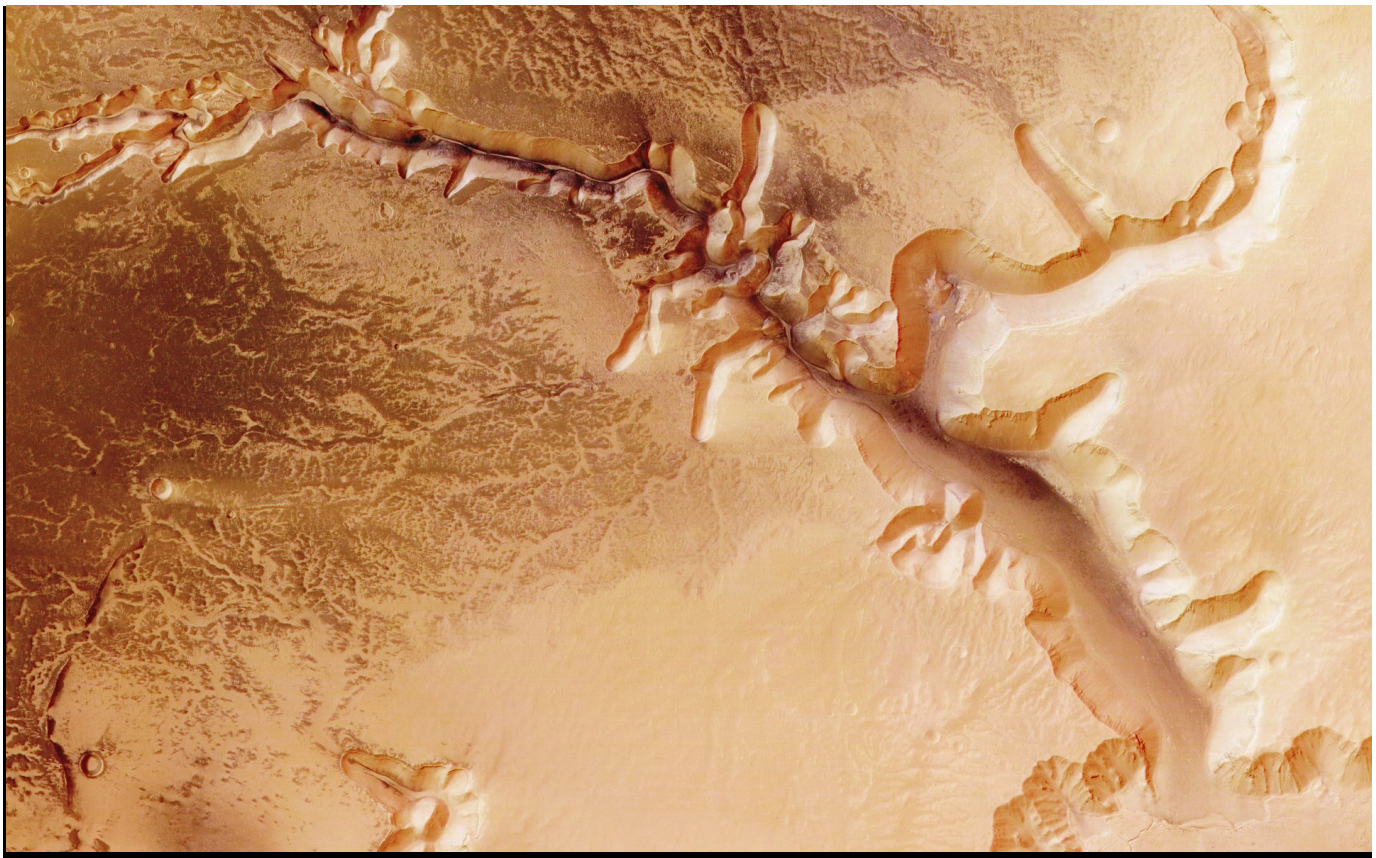
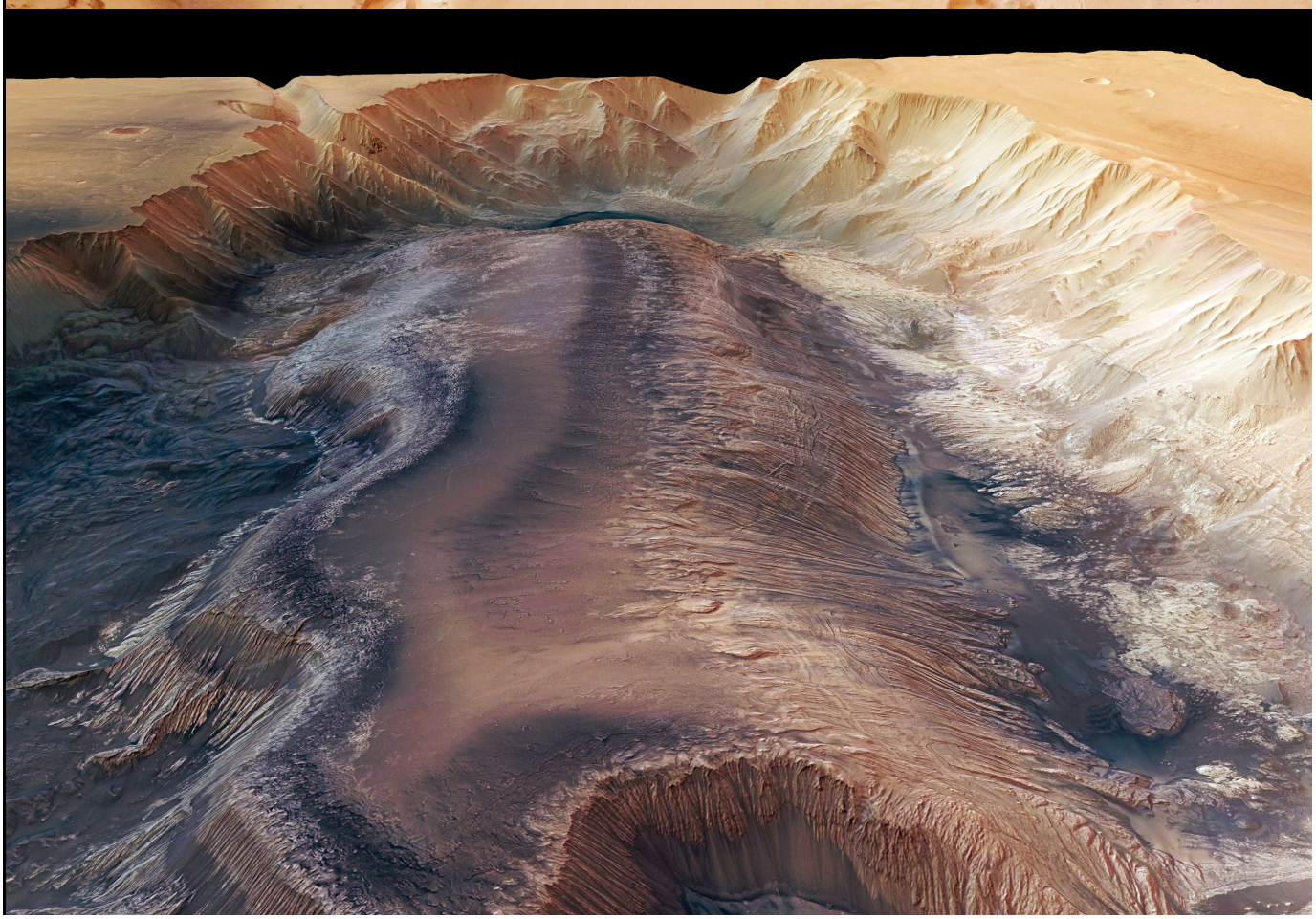
MARTIAN CANALS





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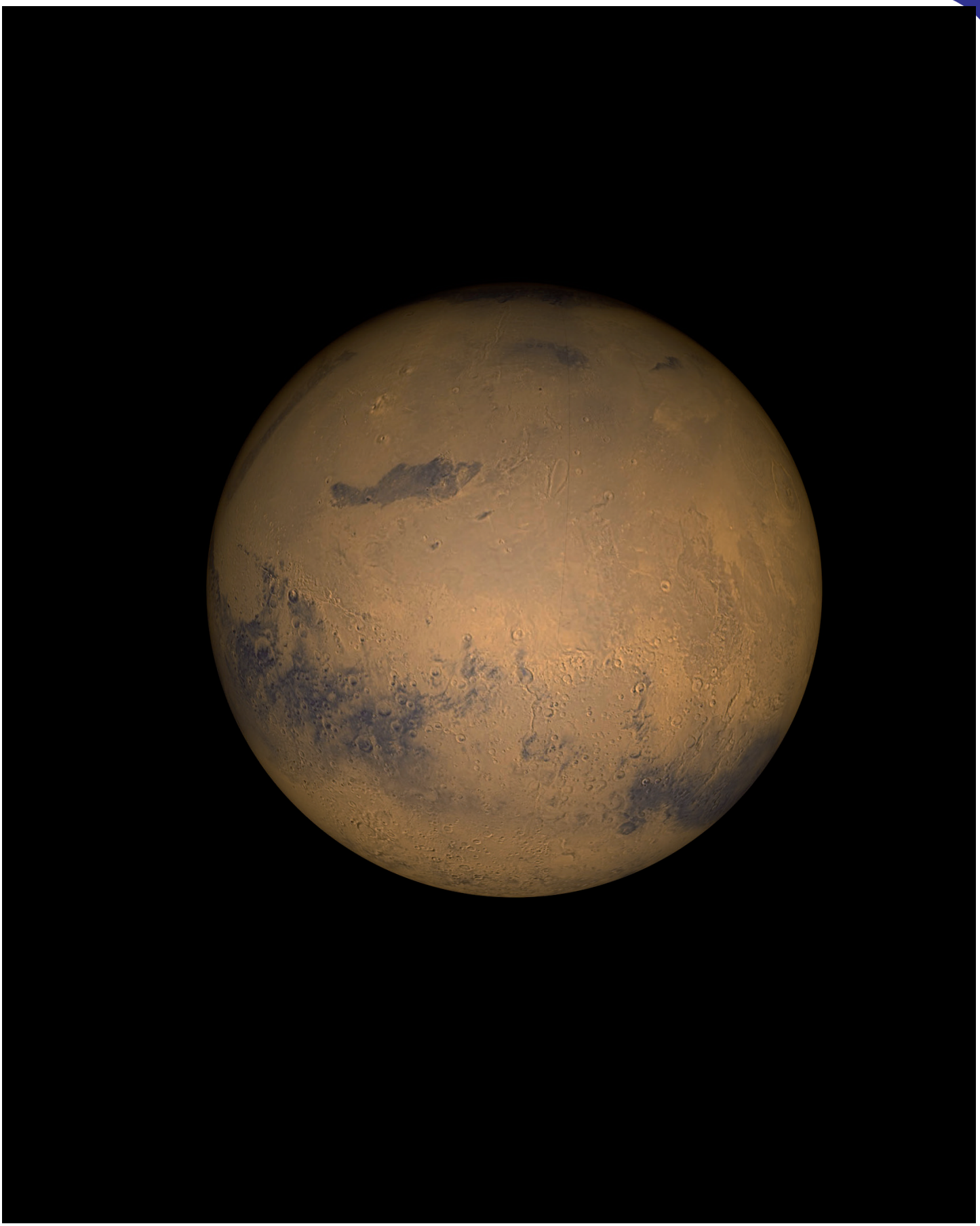
MARS FROM SPACE



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