Crossdale Science Fair 2019

HOME SCIENCE PROJECT

Intergalactic Slime

If you were to find some slime from another planet, what would it look like? In this instruction card there are several different types of slime that you can make. Once you have your base slime, have a think about what you could add to it to make it look like it has come from a different planet. At the science fair we will compare our different slimes and see if we can find a difference between them. We are looking forward to seeing your creations!

Below are some suggested recipes for slime, but do feel free to use your very own recipes and creations for this.

SIMPLE SLIME

Equipment

- Cornflour
- Water
- Food colouring (optional)
- Mixing bowl
- Spoons (optional)

Method

1. Put approx ½ cup cornflour in the mixing bowl then add ¼ cup water.
2. Mix, add a few drops of colouring.
3. When blended (or even before) get your hands in there and experience the odd properties of your slime. How can it be squeezed into a solid then turn back into liquid when you open your hands? Did you know you have created a Non-Newtonian Fluid?

BOUNCY SLIME *A little more complex*

Equipment

- Cornflour
- White pva glue (use the children's washable stuff.)
- Cold water
- Liquid starch (or mix dry laundry starch with water)
- Food colour
- Mixing bowl
- Wooden spoon

Method

1. Mix ½ table spoon of liquid starch with ½ tablespoon water in a mixing bowl
2. Add 1 tablespoon of white glue to the mixture.
3. Mix well for 1 minute.
4. Add another tablespoon of white glue to the mixture. Mix well for another minute.
5. Let the mixture stand for several minutes to thicken.
6. Pick it up in your hands and roll it about to get the stickiness off and allow it to dry off.
7. Now you can try stretching and bouncing it!

Possible extensions

- What happens to the texture if you add shaving foam?
- Compare the different types of slimes – what is the same? What is different?
- Rolling slime on newspaper – what happens to the slime?

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Solar System model

So you've chosen to make your very own model of our Solar System?
What an out-of-this-world idea!
We suggest that you work with a grown up to complete this big project!
Firstly, pick your level of challenge:

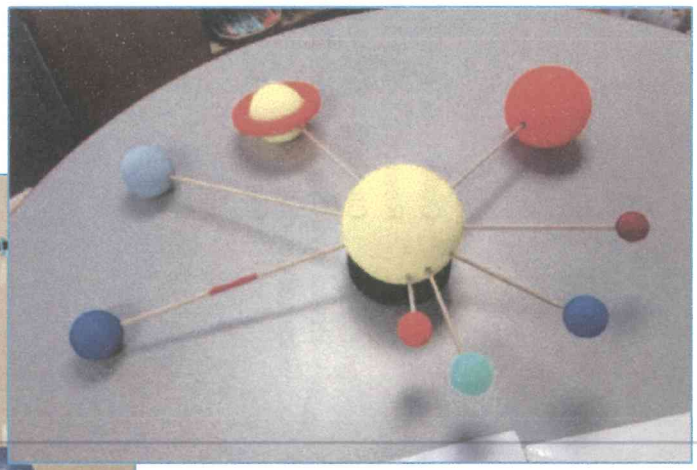
Challenge Level 4: To show size and distance of the 8 planets with moving components showing their orbit around The Sun and individual rotation of planets.

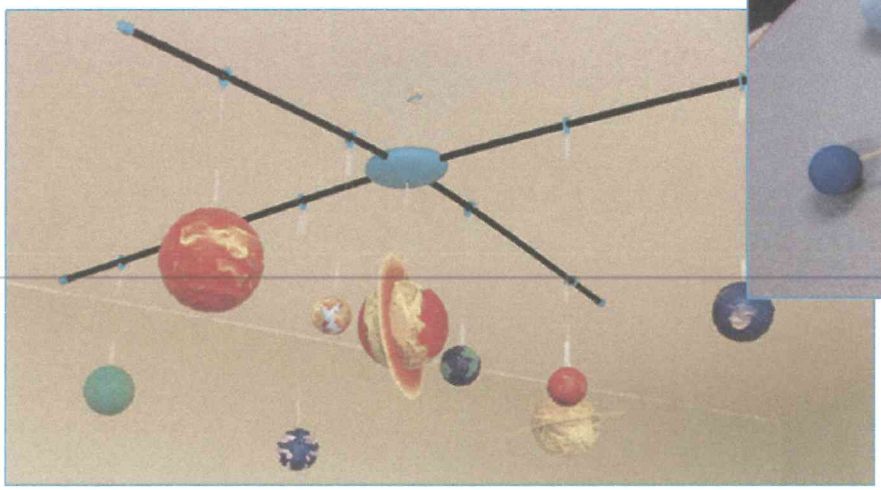
Challenge Level 3: To show size and distance of the 8 planets with moving components showing their orbit around The Sun.

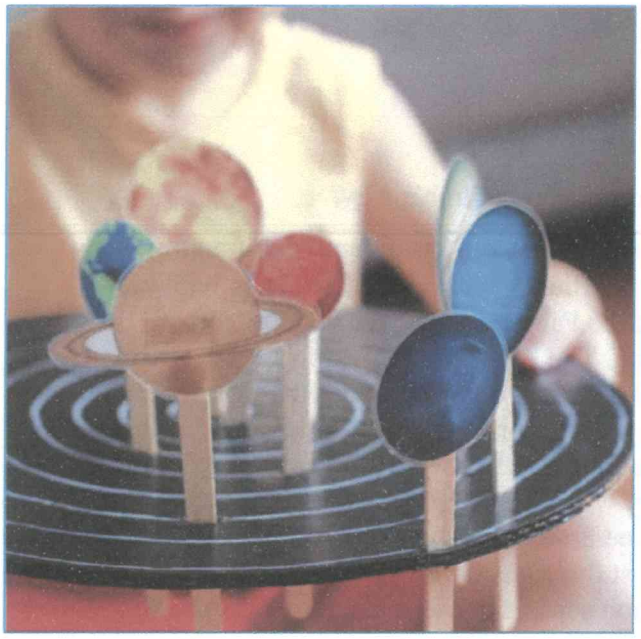
Challenge Level 2: To show size and distance of The Sun and 8 planets to scale.

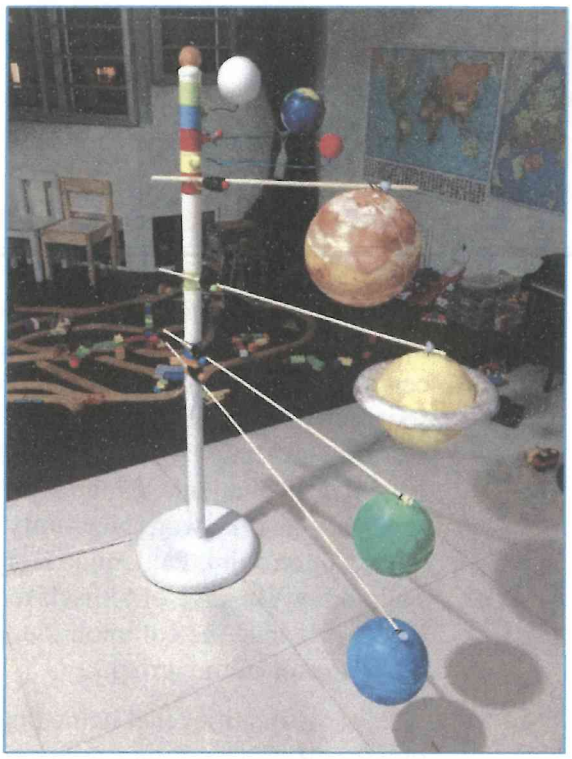
Challenge Level 1: To show comparative size of The Sun and 8 planets to scale.

Next, think carefully about your design. Will it lay flat on the table? Will it hang? Have a look at these examples for ideas, or perhaps you already have your own unique plan!









Equipment:

This may be different depending on how you decide to construct your Solar System, but here are some tips if you need help!

- **To construct the spheres:**
  Polystyrene balls / papier mâché / round objects e.g. sports balls, fruit!

- **Material to connect the items:**
  Strips of card and split pins / string and a coat hanger to hang spheres / wooden kebab skewers / lollipop sticks and thick cardboard

- **For decoration:**
  Paint / collage paper and glue / tissue paper and glue

Possible extensions:

- Could you learn some interesting facts about the planets to share with your audience at The Science Fair?
- Find out about the names of the other 7 planets (apart from Earth). Do they have something in common? Why were they given these names?

Have fun going where no man has gone before!

Mr. Brierley and Miss Rodriguez

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HOME SCIENCE PROJECT

Marshmallow Constellations

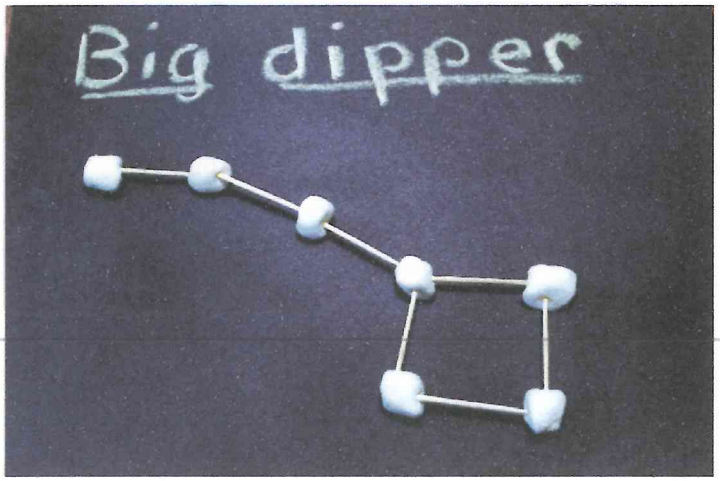
Will you be able to resist eating all your marshmallows and save some to make these crazy constellations? Hmmm... I'm not sure!
With this project, you will be recreating the beautiful constellations which have fascinated humans for thousands of years! You may be able to work independently with this project, or with a grown up if you wish.
Firstly, pick your own level of challenge:

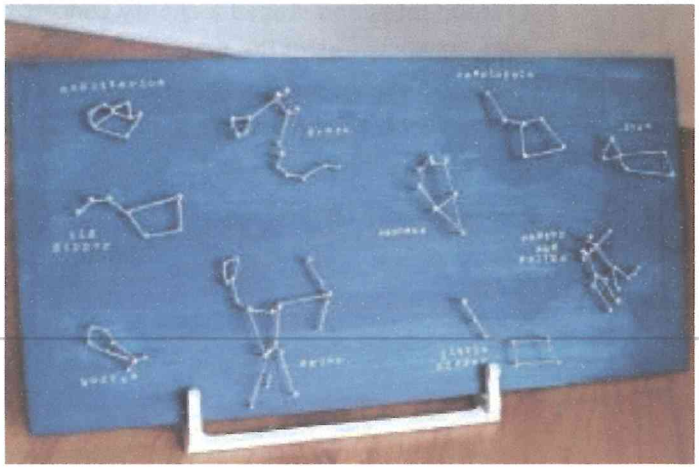
Challenge Level 3: Create and find out facts about the names of the several constellations you display (we have black sugar paper to cover your table and make your display come to life!). Share these amazing facts with your audience.

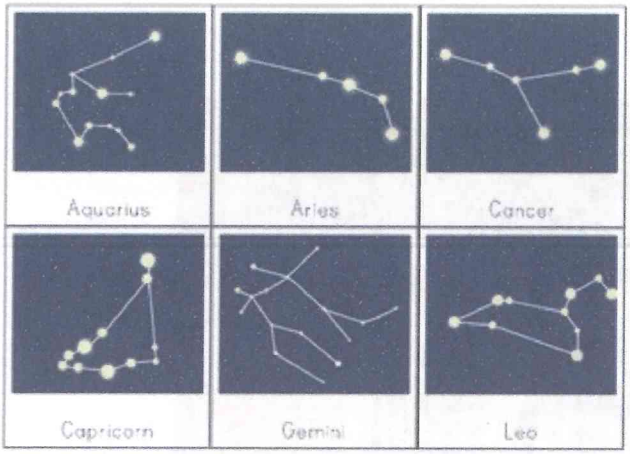
Challenge Level 2: Create several constellations to display (we have black sugar paper to cover your table and make your display look space-tacular!).

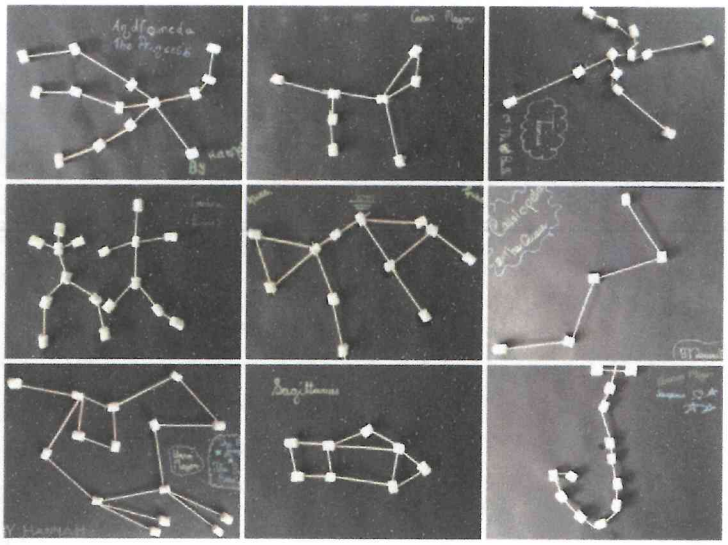
Challenge Level 1: Create a constellation and label it. Bring some spare materials along with you and make more constellations with the audience at your stall.

Here are some examples to give you ideas:









Equipment:

This may be different depending on how you decide to construct your constellations, but here are some tips if you need help!

- **To construct the stars:**
  Marshmallows / perhaps different sized marshmallows, to show which stars are brighter? ***Remember not to eat the marshmallows you use for the project – save yourself a handful before you start!***

- **Material to connect the items:**
  Toothpicks / spaghetti / pipe cleaners

- **For decoration:**
  A dark blue or black background on which to stick your constellations / glitter

Possible extensions:

- Can you print a few images of the real constellations that match your sugary creations?
- Find out which constellations are easiest to spot and keep a look out for them one starry night! Wrap up warm and sit in the garden with your grown up on a night with a cloudless sky.

Have fun and remember to reach for the stars, not eat them!
Mr. Brierley and Miss Rodriguez

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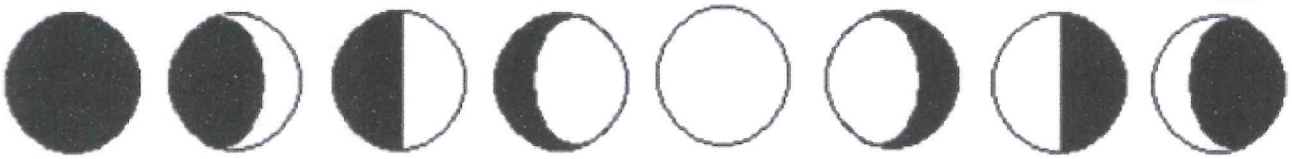
HOME SCIENCE PROJECT

Cup Phases of the Moon

Have you ever noticed that the shape of the moon in the sky often seems to change? The moon itself doesn't produce any light like the sun. What we see when we see the moon is sunlight reflected off the moon.

The "phases of the moon" describe how much of the moon appears to us on Earth to be lit up by the sun. Half of the moon is always lit up by the sun (except during an eclipse) but we only see a portion that's lit up. These are the phases of the moon.



New Moon	Waxing Crescent	First Quarter	Waxing Gibbous	Full Moon	Waning Gibbous	Third Quarter	Waning Crescent

Discover the phases of the moon for yourself with this little project you can either complete on your own, or with a grown up.

Firstly, pick your level of challenge:

Challenge Level 3: learn about the phases of the moon and create cups which can be turned by the user to show all the phases. In addition, label all the phases and find out which phase we will see on the night of the Science fair, to let your audience know which one to look out for!

Challenge Level 2: learn about the phases of the moon and create cups which can be turned by the user to show all the phases. In addition, label all the phases.

Challenge Level 1: Learn about the phases of the moon and create cups which can be turned by the user to show all the phases.

Equipment:

- 2 large clear plastic cups
- Black permanent marker pen
- 1-inch diameter yellow/white circle
- A piece of black paper/card
- Glue/tape
- Ruler
- Small white stickers / white paper to glue

Method:

1) Measure the height of the plastic cup. Cut a rectangular piece of black paper with the height of the plastic cup as the length of the paper. Paste the yellow circle on the black construction paper.

2) Roll the black paper up with the yellow circle facing outwards. Make sure the yellow circle is not covered by the black paper. Insert the roll of black paper into one of the plastic cups and stick the black paper to the cup.

3) Put this plastic cup (with the black paper and yellow circle) INTO the second plastic cup. We will be drawing on the second plastic cup in the following steps.

4) To start the black marker drawings, first locate the yellow circle and write the name "New Moon" on a sticker underneath. Use the diagram of the phases of the moon (on the previous page) to guide you around the cup – when you have placed all 8 labels, "Waning Crescent" should come back around to "New Moon".
TIP: How can you make sure you have enough space for all 8 phases of the moon? Start by labelling "New Moon" and "Full Moon" opposite from one another. The two half-moons should sit evenly between these. Then fill the remaining spaces with the gibbous moons and crescent moons.

5) Imagine the cup is like a clock, with "New Moon" at the 12'o clock position. Turn the inside cup so that the yellow moon is in this position. Use your black marker to shade the whole circle on the outside cup. To complete, keep turning the inside cup so that the yellow circle is in the next position to shade, and use the diagram to guide your shading for each phase.