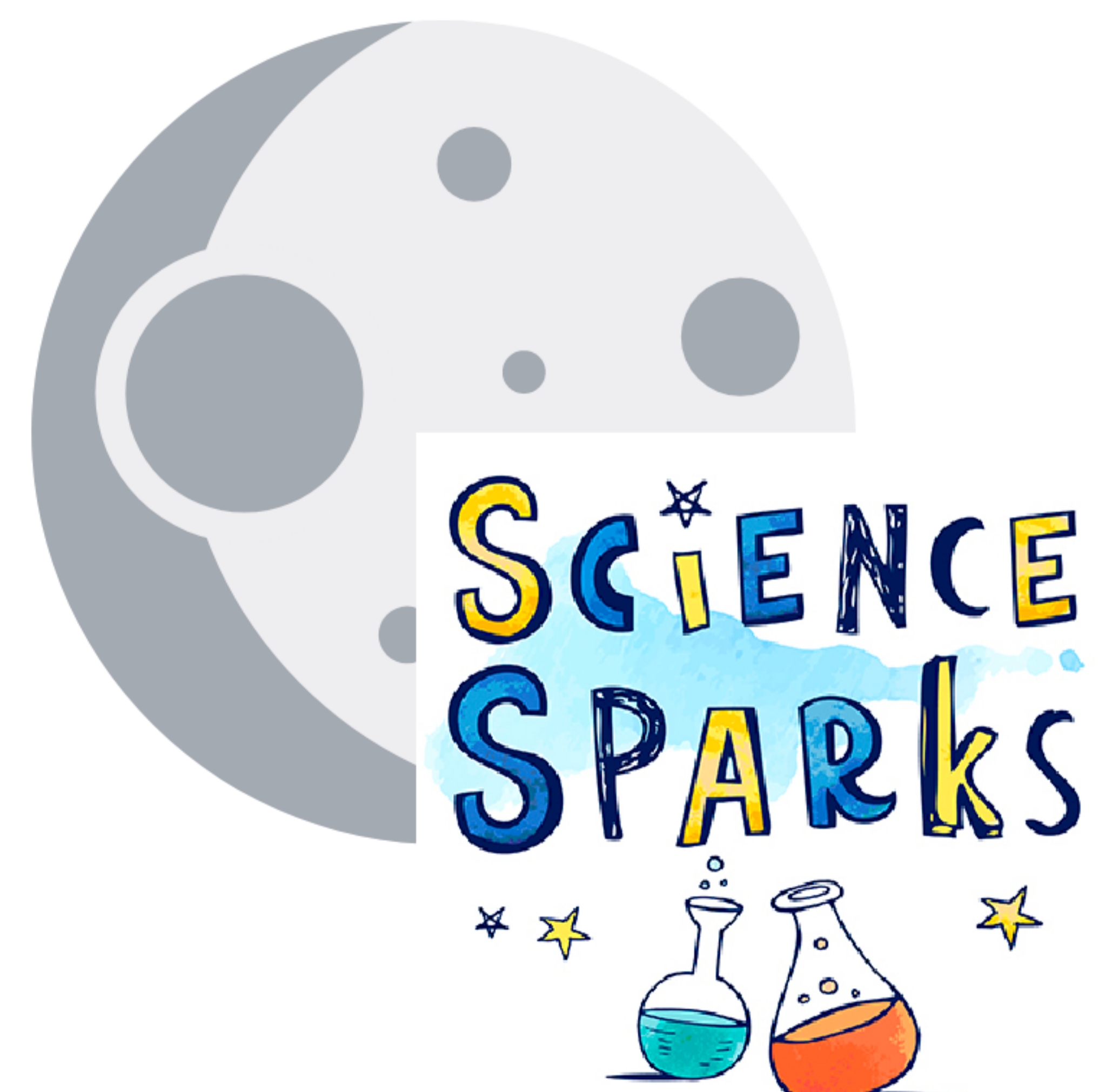




# DIY SPACE CAMP

at home ( or school )





# SPACE CAMP

## DAY 1

### Mini Bottle Rocket

Design, build and launch a mini rocket!



## DAY 2

### Expanding Universe

Use a balloon to model our expanding universe!

## DAY 3

### Egg Drop Parachute

Create and test a parachute for an egg.

## DAY 4

### Phases of the Moon

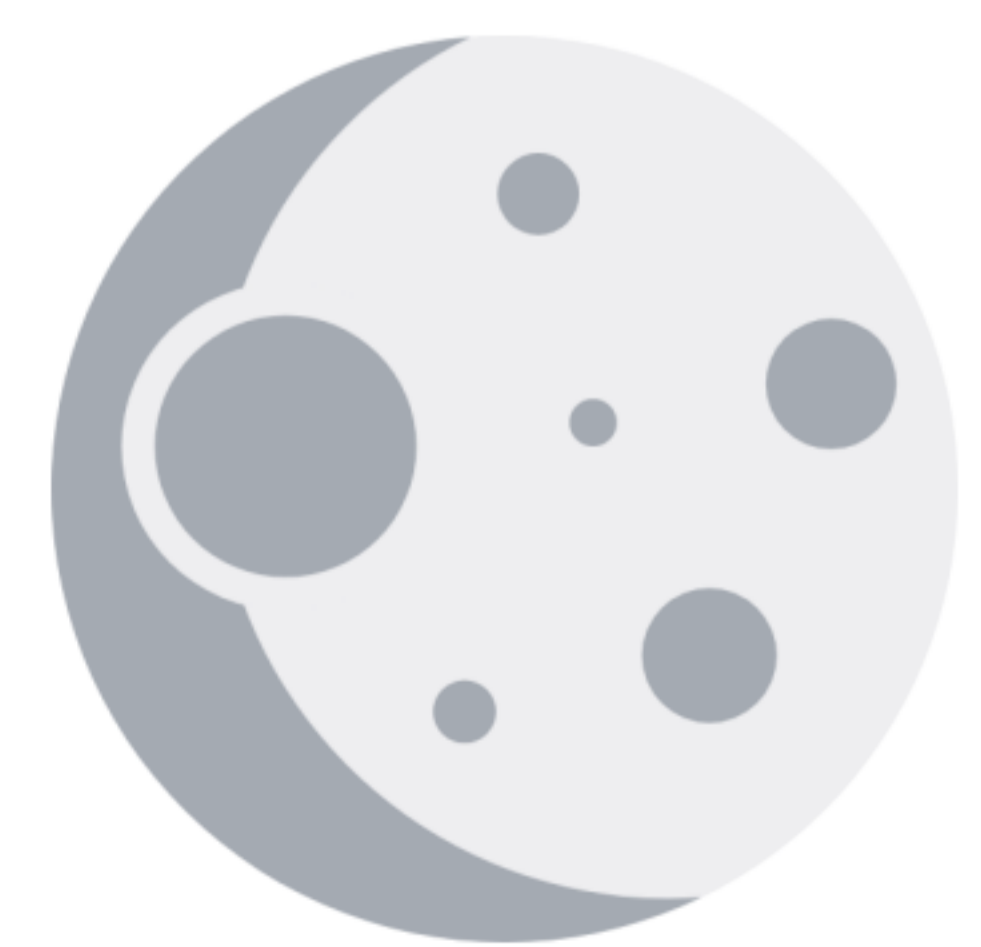
Learn about the phases of the moon, make an edible moon phase model and observe how the moon changes each day.



## DAY 5

### Stargazing

Find out how to be a successful stargazer and keep a log of the night sky.





# MINI BOTTLE ROCKET

## You'll need

Small 500ml bottle - empty  
Cork which fits tightly inside the bottle neck  
Half a piece of kitchen roll / tissue  
1 tablespoon baking soda  
Vinegar or lemon juice  
3 Straws  
Tape



## Instructions

Use tape to attach 3 straws to the side of the bottle so it stands up, upside down.

Pour about 3cm of vinegar into the bottle.

Wrap the baking soda up in the kitchen roll to make a little parcel.

Choose a launch area outside. It needs to be a hard surface.

When you're ready to launch, drop the baking soda parcel into the bottle, quickly add the cork, put the rocket down and stand back!



**Warning - make sure you have a clear empty space and keep observers well back from the launch site as the rocket shoots up very quickly.**



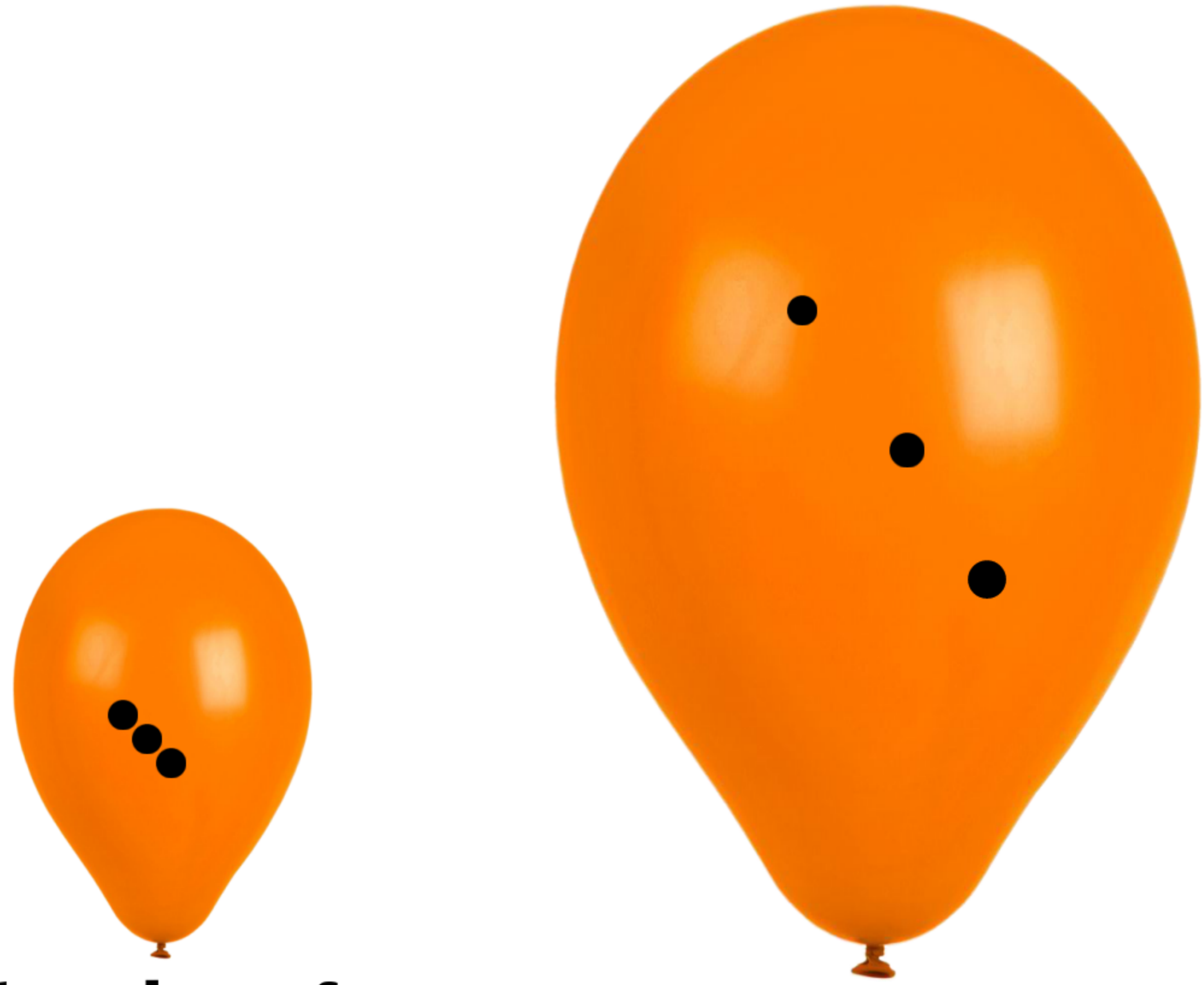
# EXPANDING UNIVERSE

## You'll need

Balloon

Clip

Black marker



## Instructions

Blow up the balloon so it's about the size of an orange.

Clip it with a balloon clip.

Draw dots on the balloon with a black marker. These represent a galaxy.

Remove the clip and keep blowing up the balloon.

What happens to the dots?

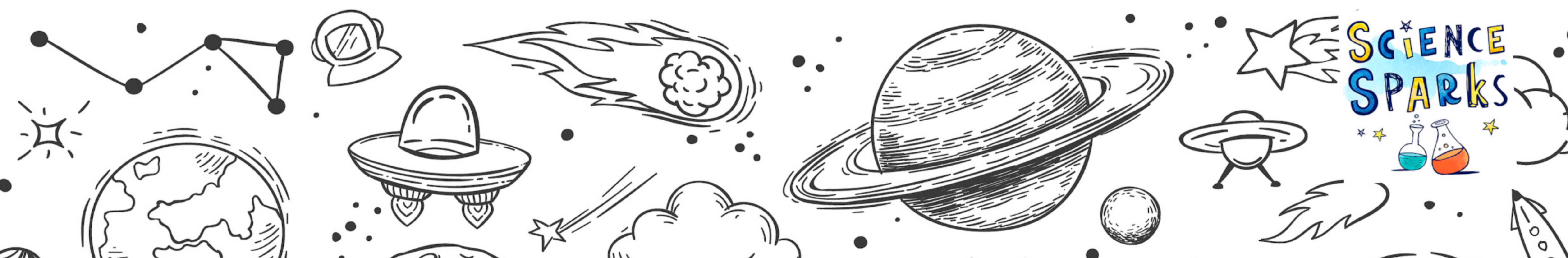
## What's happening?

The balloon is a model of the universe which is constantly expanding outwards. The universe has been expanding ever since the big bang about 13.8 billion years ago.

Science Sparks™

Adult supervision required. You are responsible for your own safety.

[www.sciencesparks.com](http://www.sciencesparks.com)





# EGG DROP PARACHUTE

## You'll need

Bin bag/plastic sheet/paper or other flat material.

4 pieces of string

sellotape or masking tape

3 eggs ( we boiled ours )



## Instructions

Lay the bin bag out flat and cut out a big square.

Make a hole in each corner, thread a piece of string through it and tie a knot.

Tie all 4 pieces of string together and tape the egg to the bottom.

Drop the parachute from different heights to investigate if it slows the fall of the egg.

## What's happening?

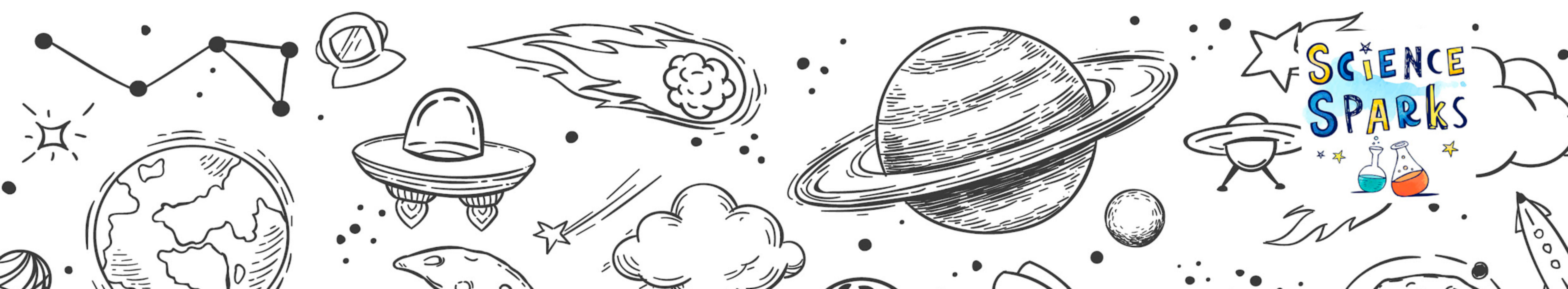
A egg dropped without anything to slow it down will fall fast and break. The addition of a parachute increases air resistance making the egg fall more slowly.

Sometimes parachutes are used to slow a spacecraft down as it falls back to Earth.

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# PHASES OF THE MOON

FIRST QUARTER

● WAXING GIBBOUS

WAXING CRESCENT

FULL MOON

NEW MOON

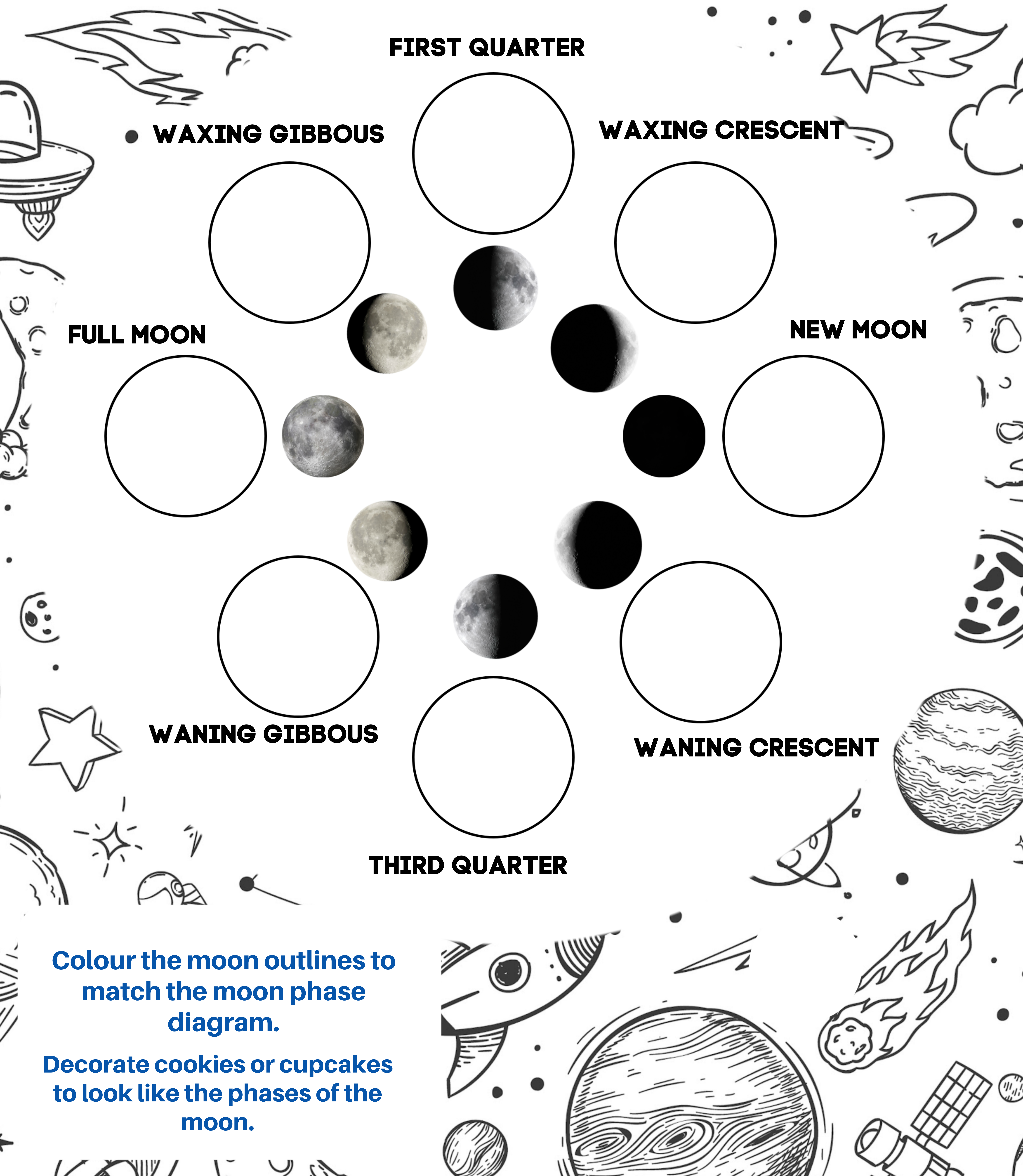
WANING GIBBOUS

WANING CRESCENT

THIRD QUARTER

Colour the moon outlines to match the moon phase diagram.

Decorate cookies or cupcakes to look like the phases of the moon.

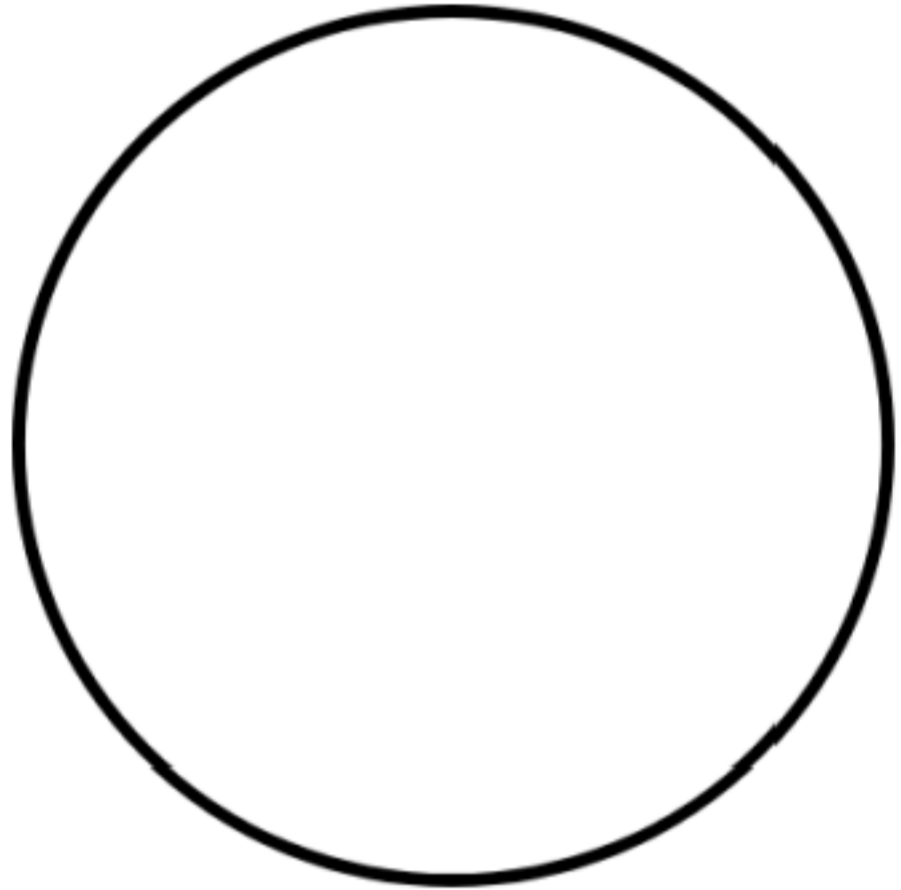




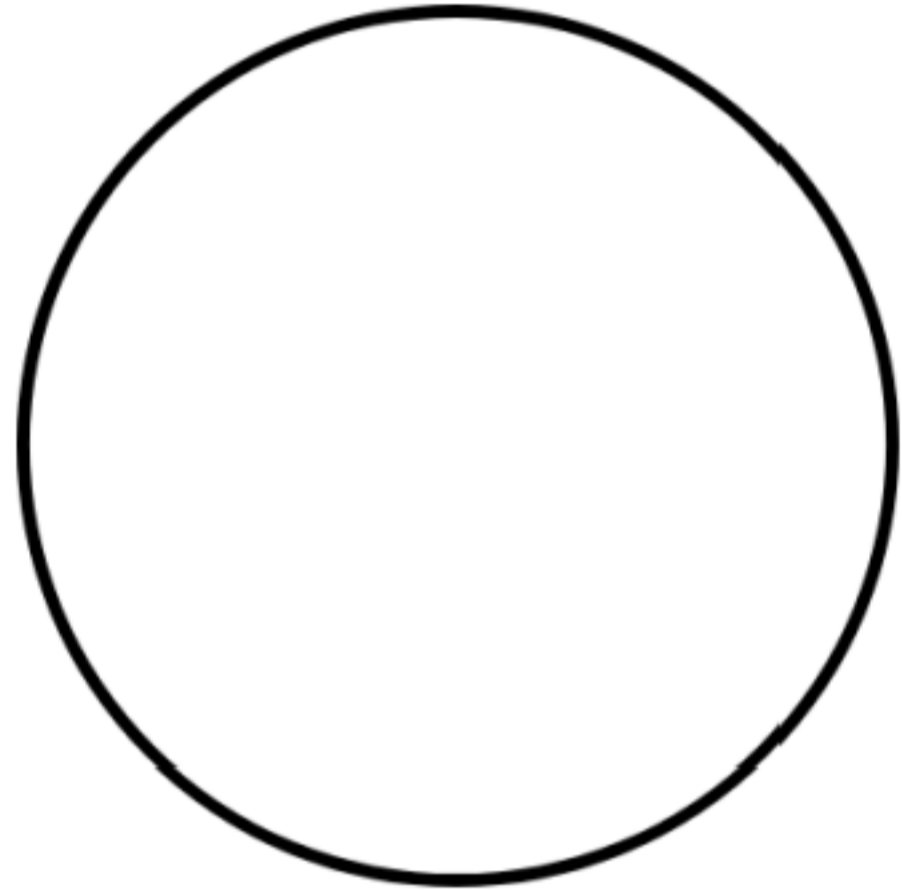
# MOON LOG BOOK



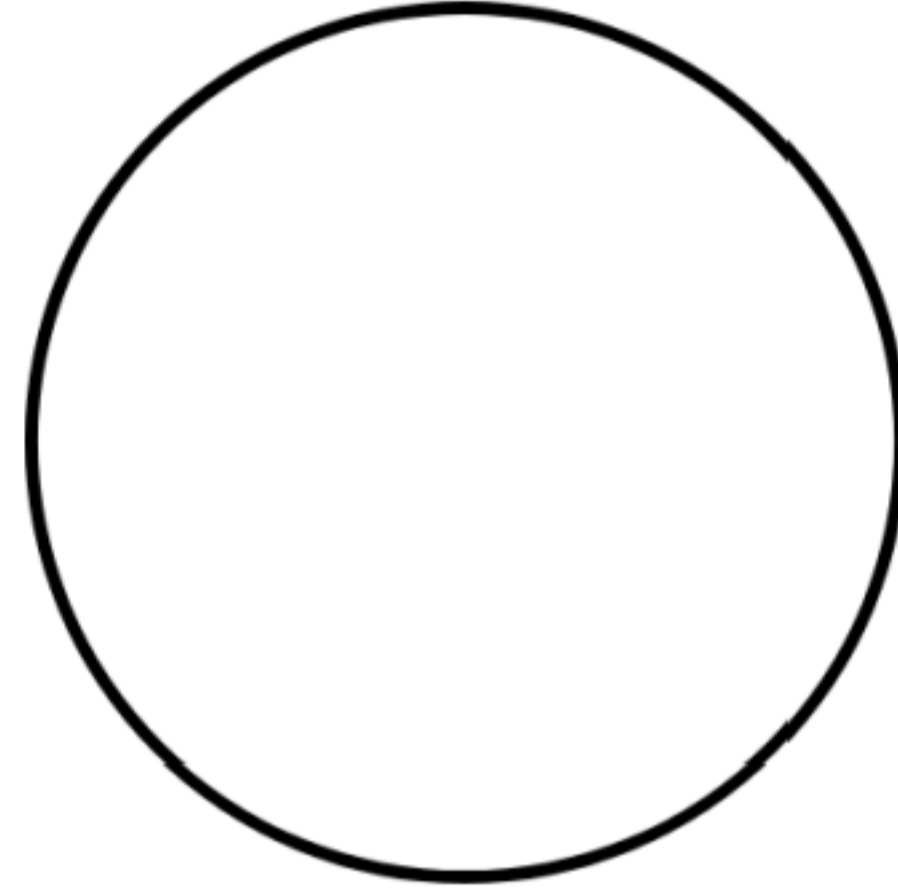
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**SKY CONDITIONS**



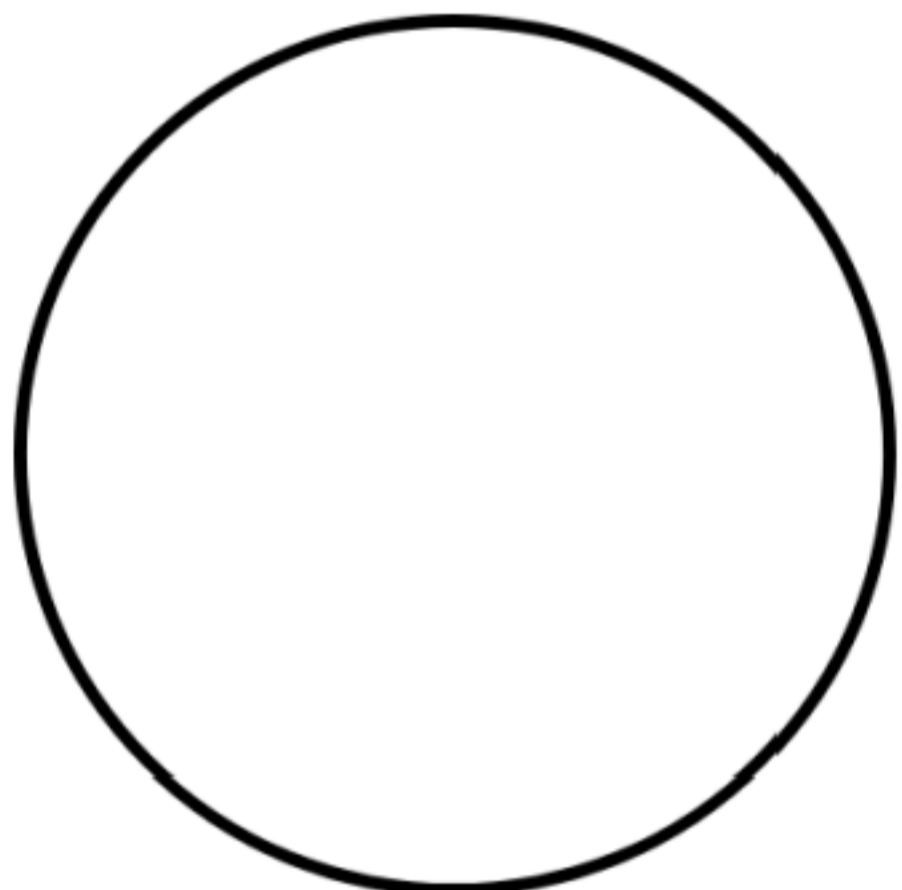
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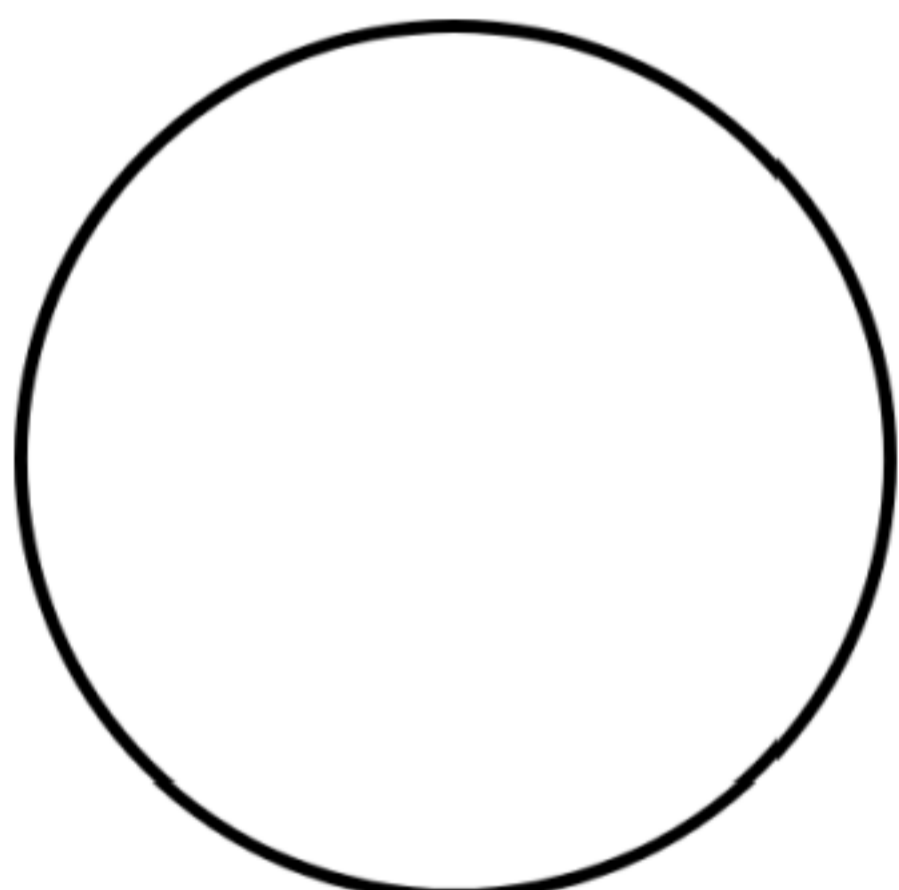
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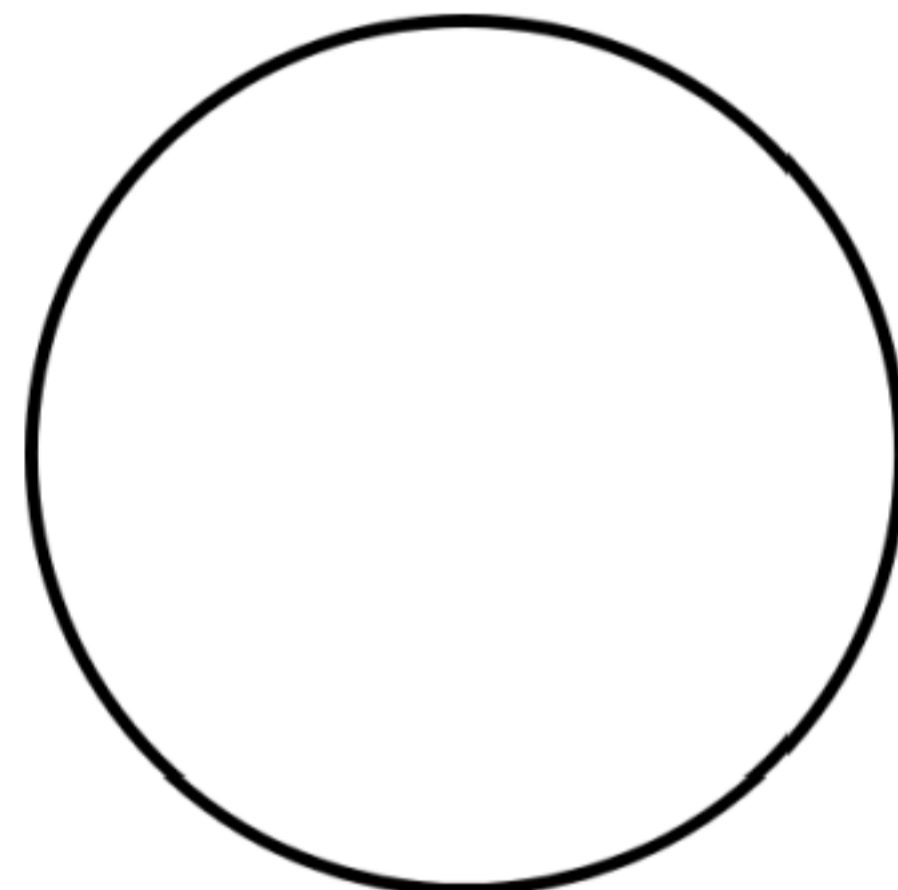
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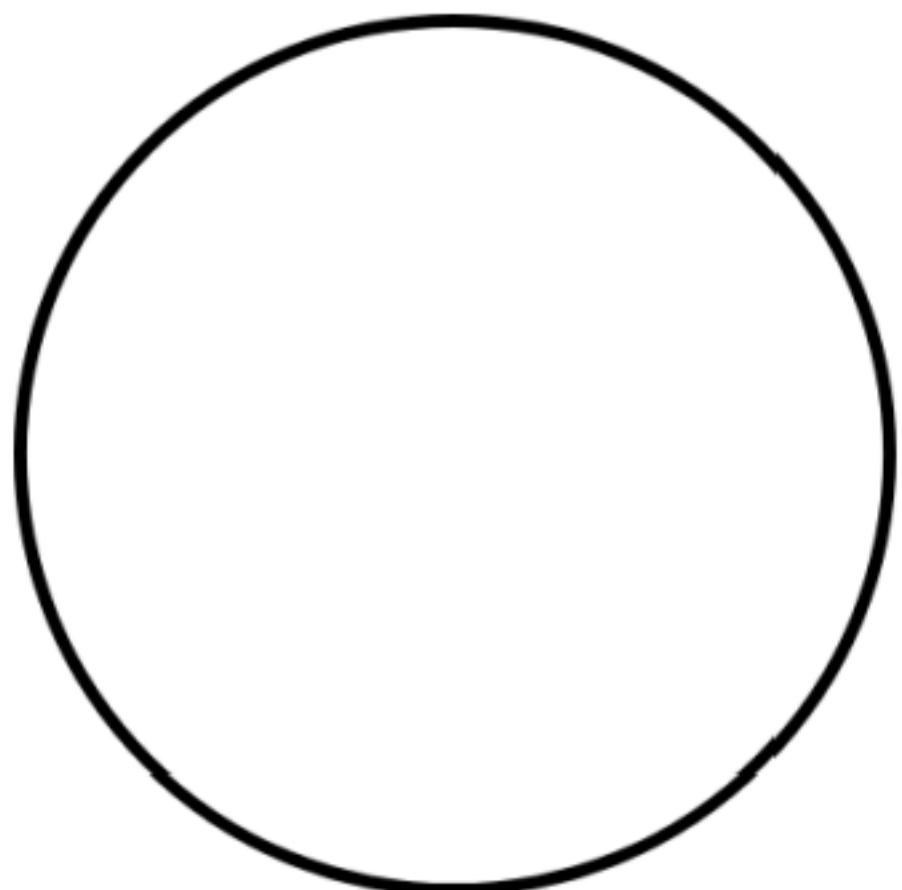
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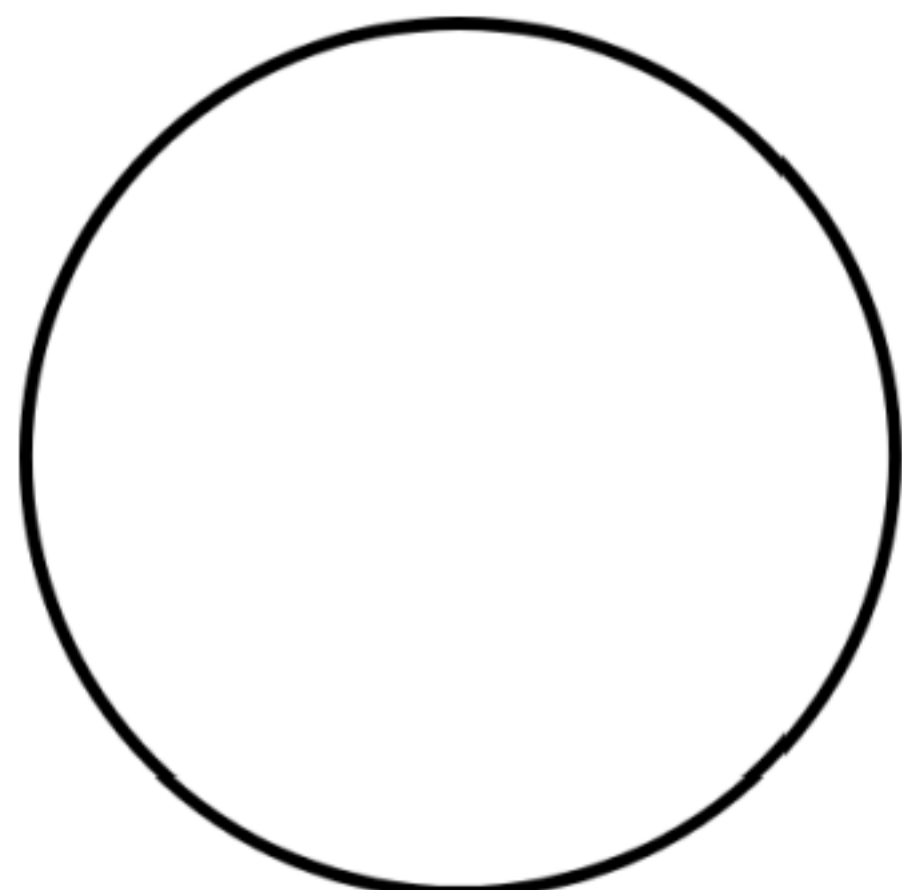
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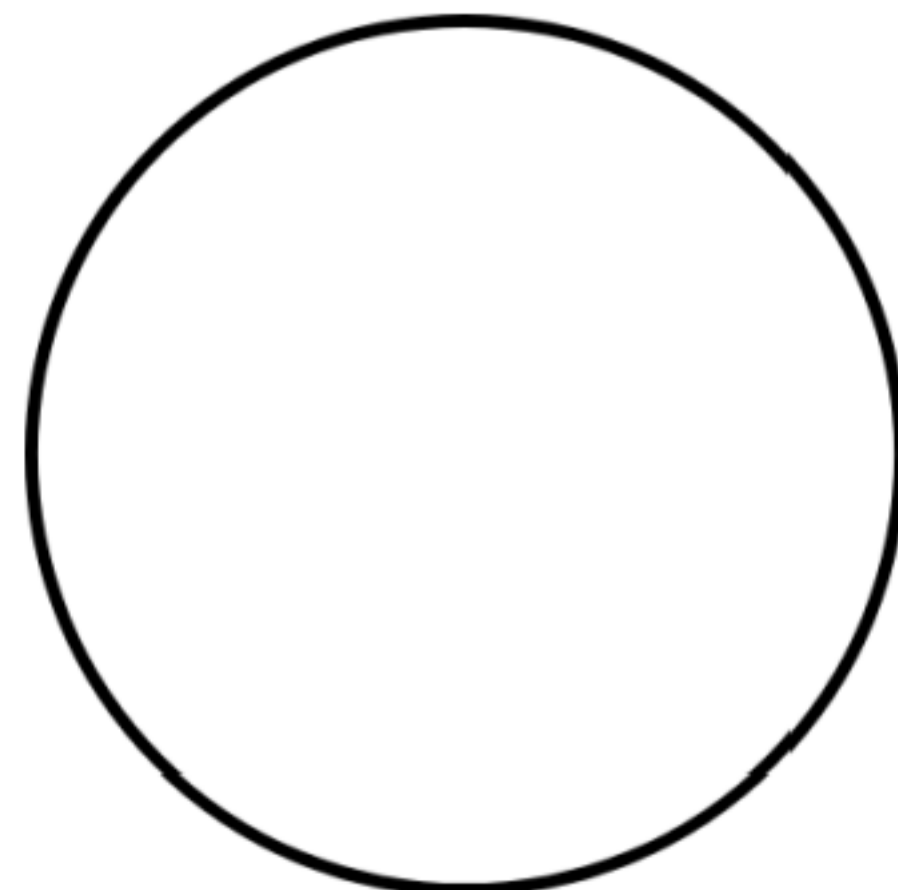
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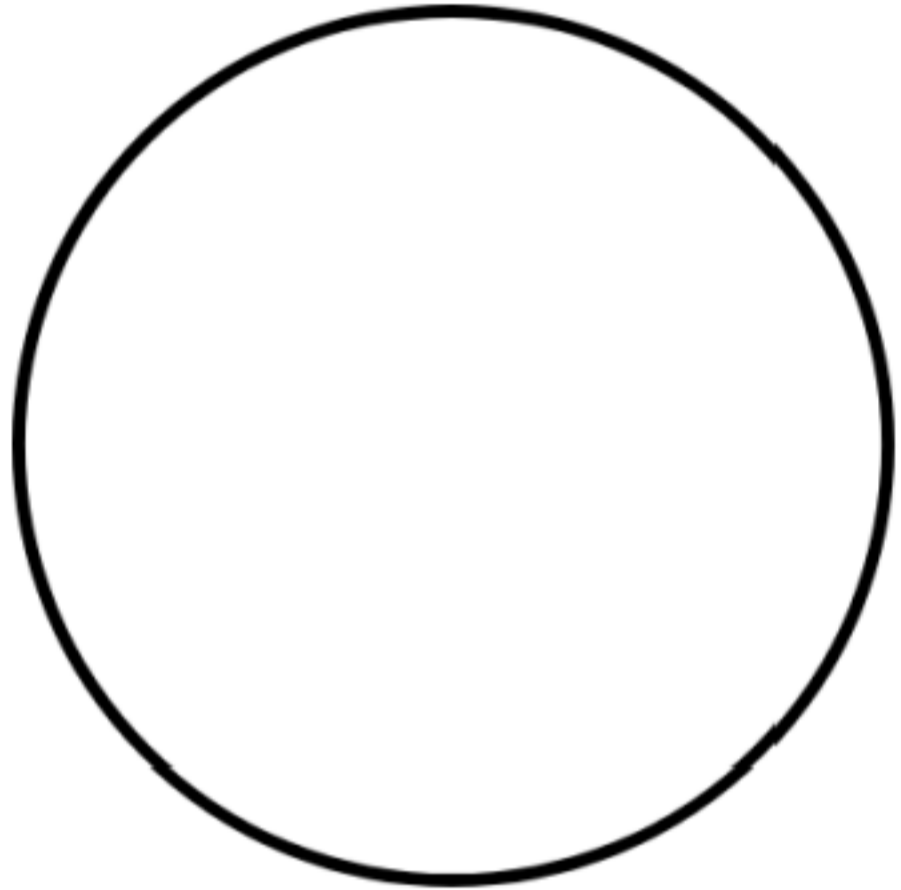




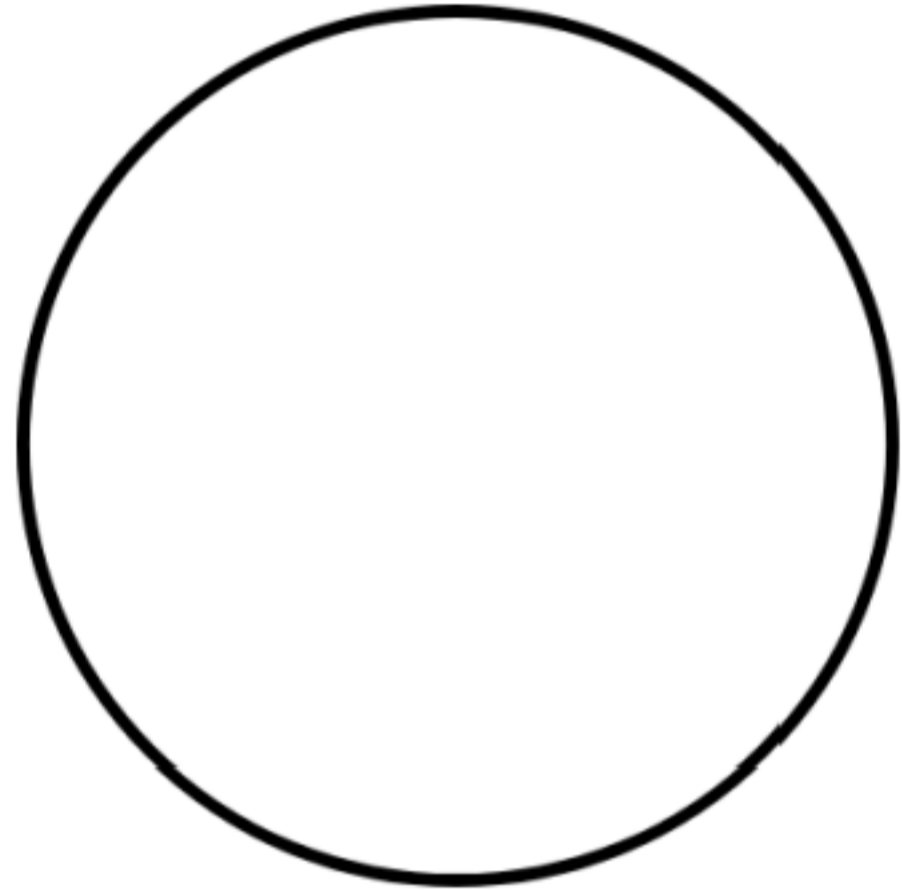
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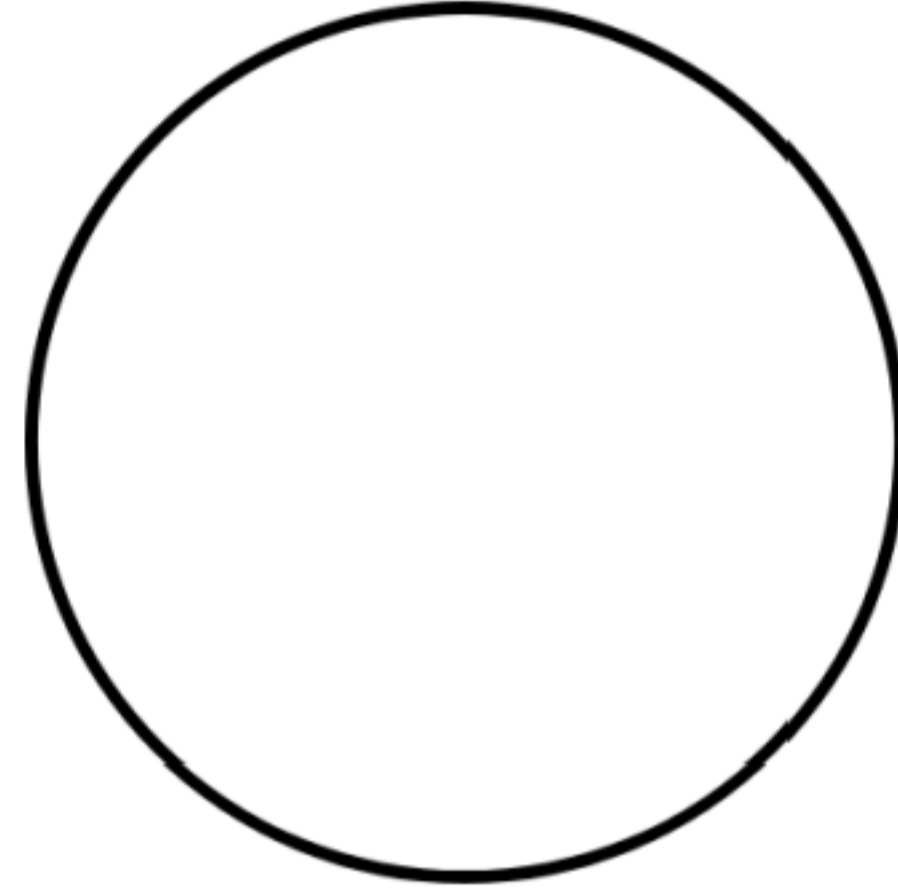
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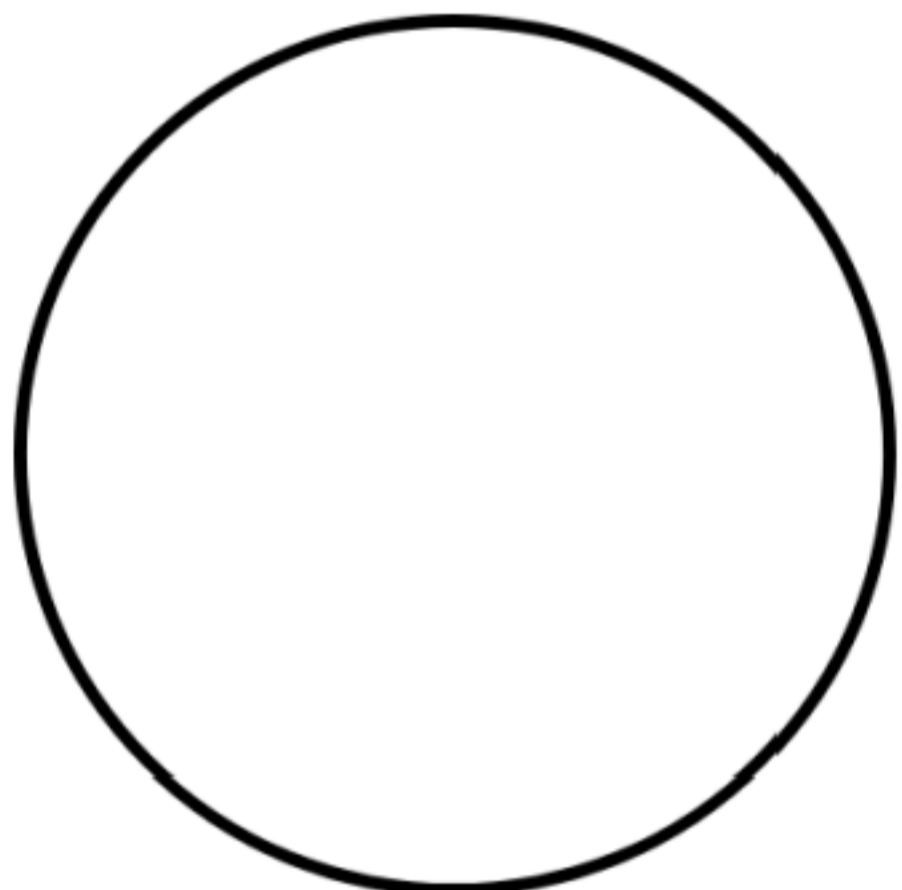
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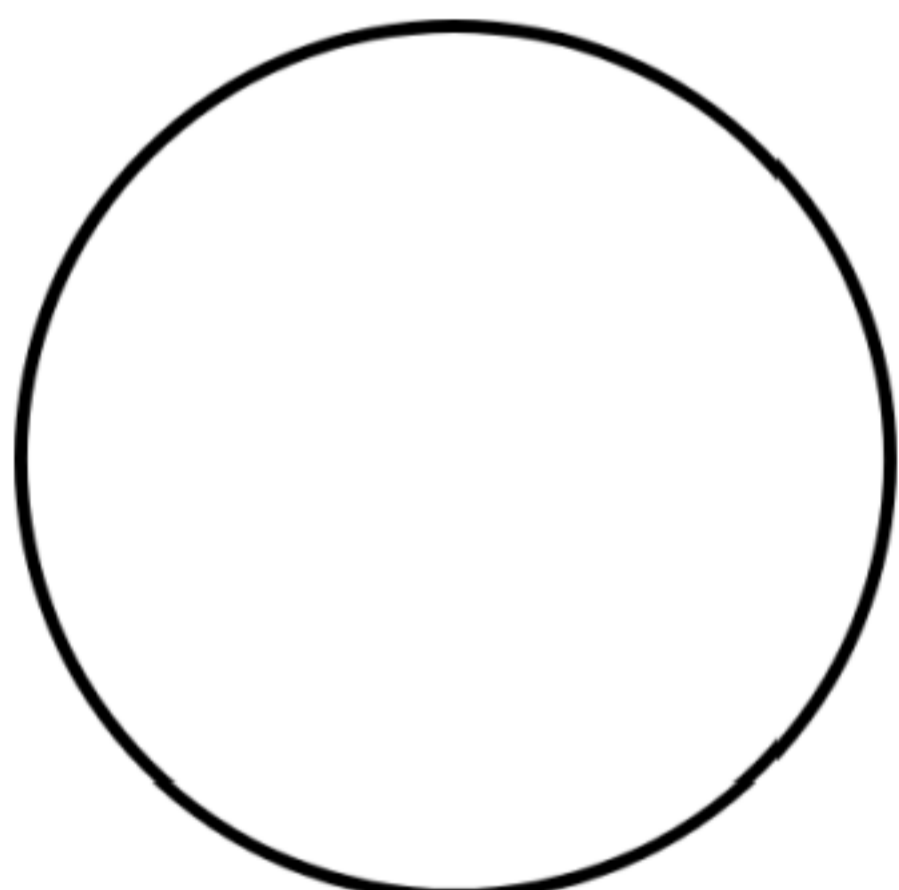
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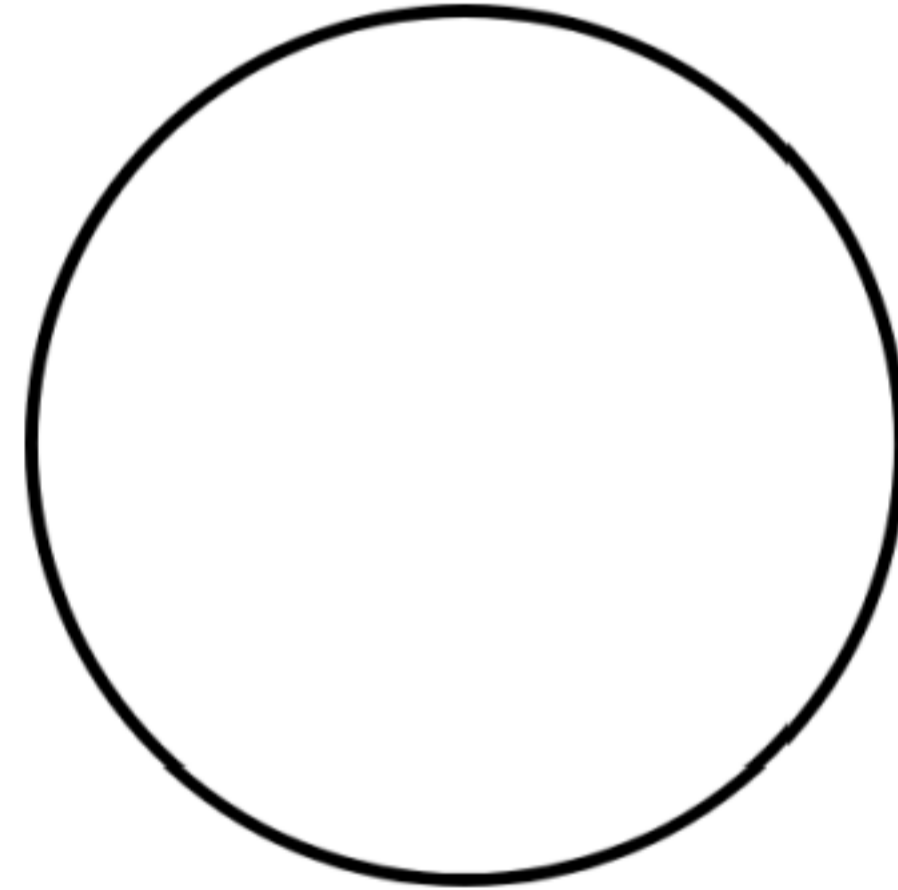
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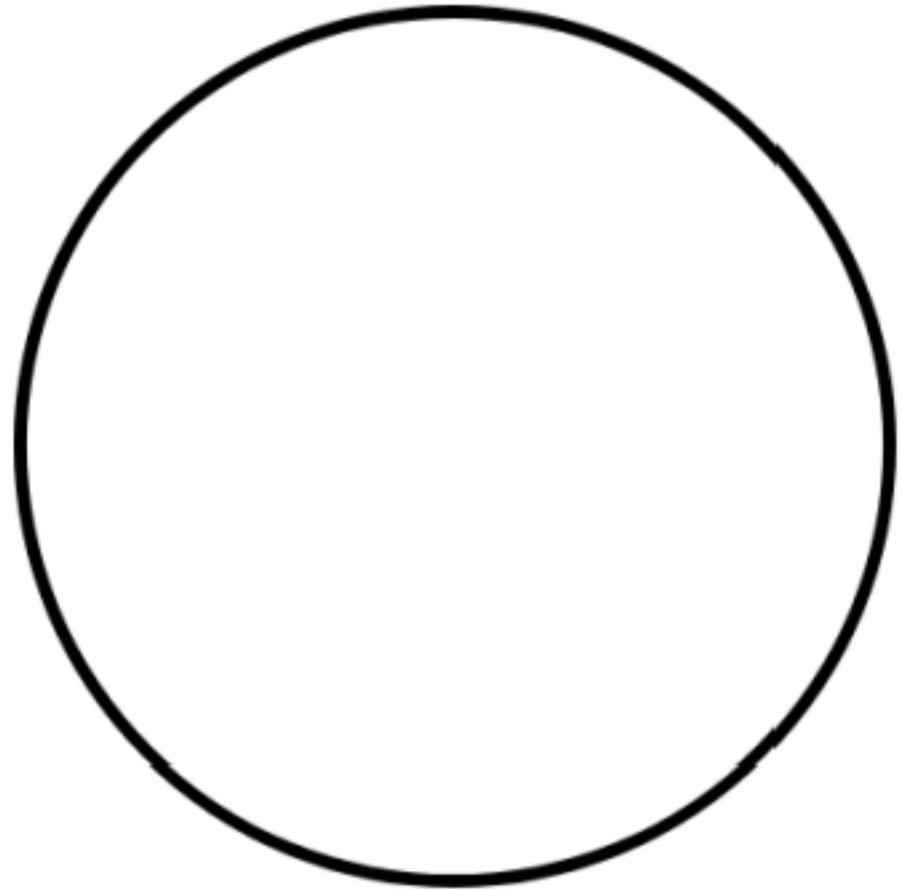
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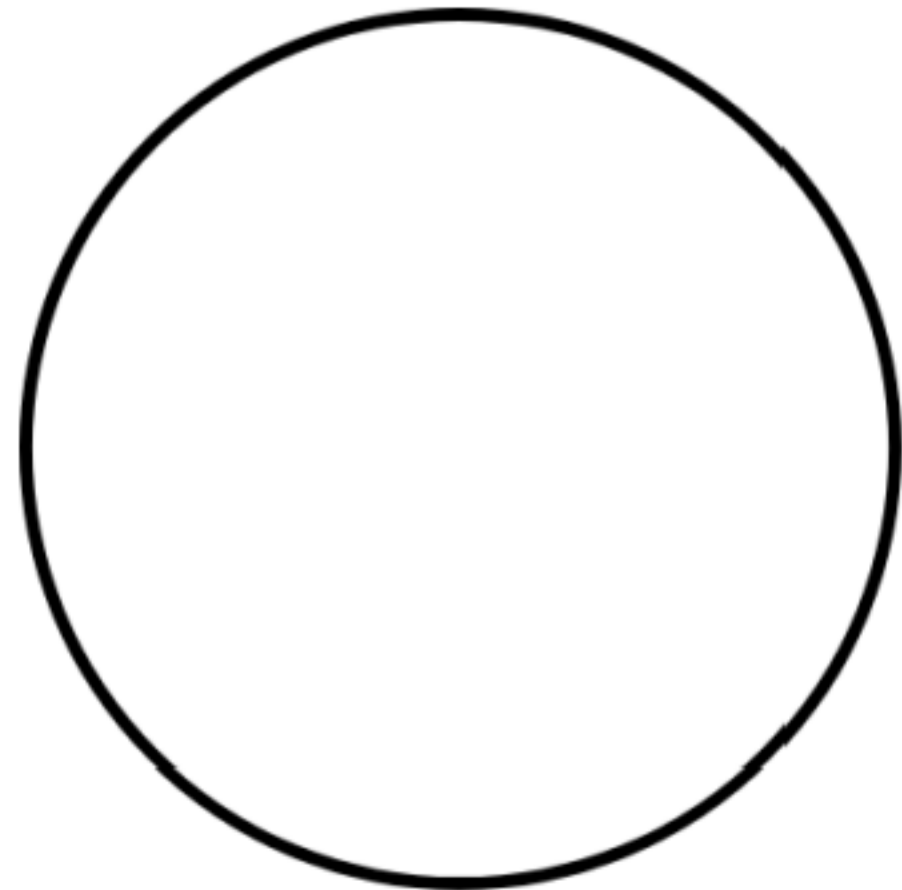
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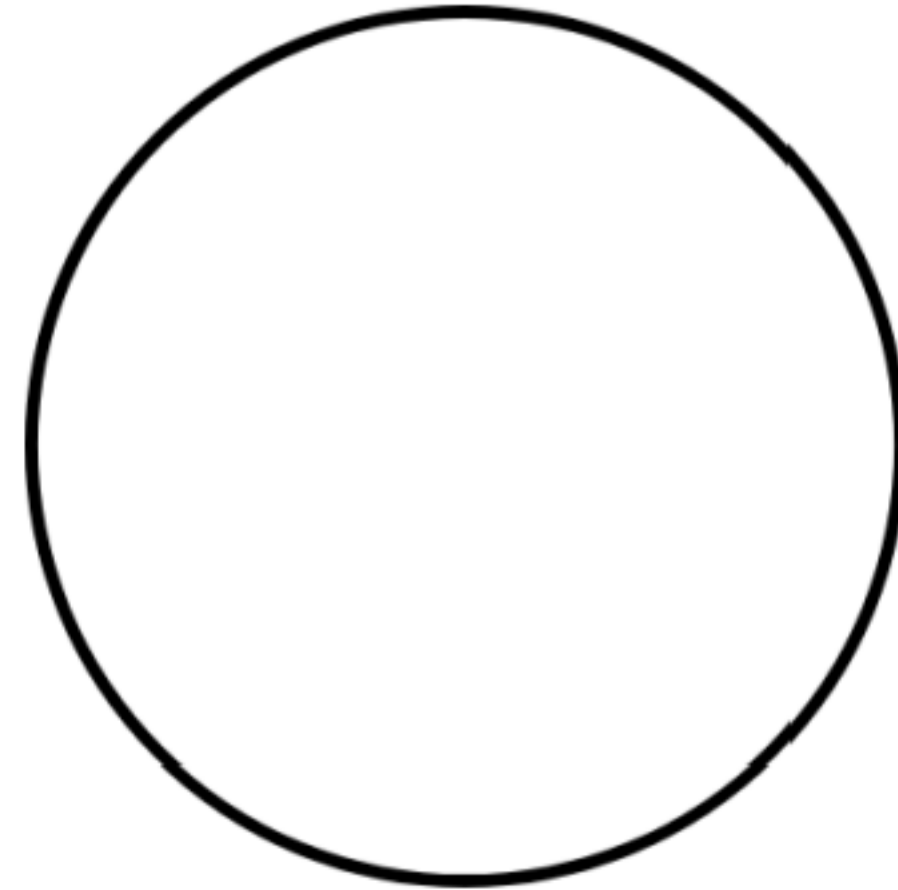
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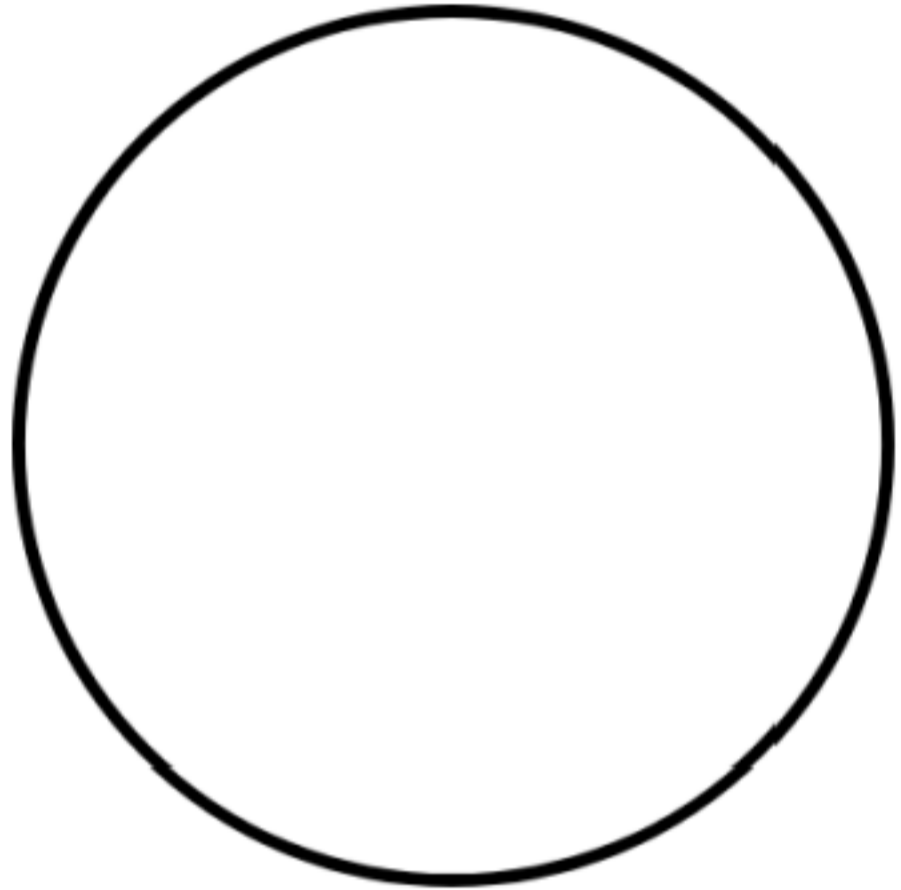




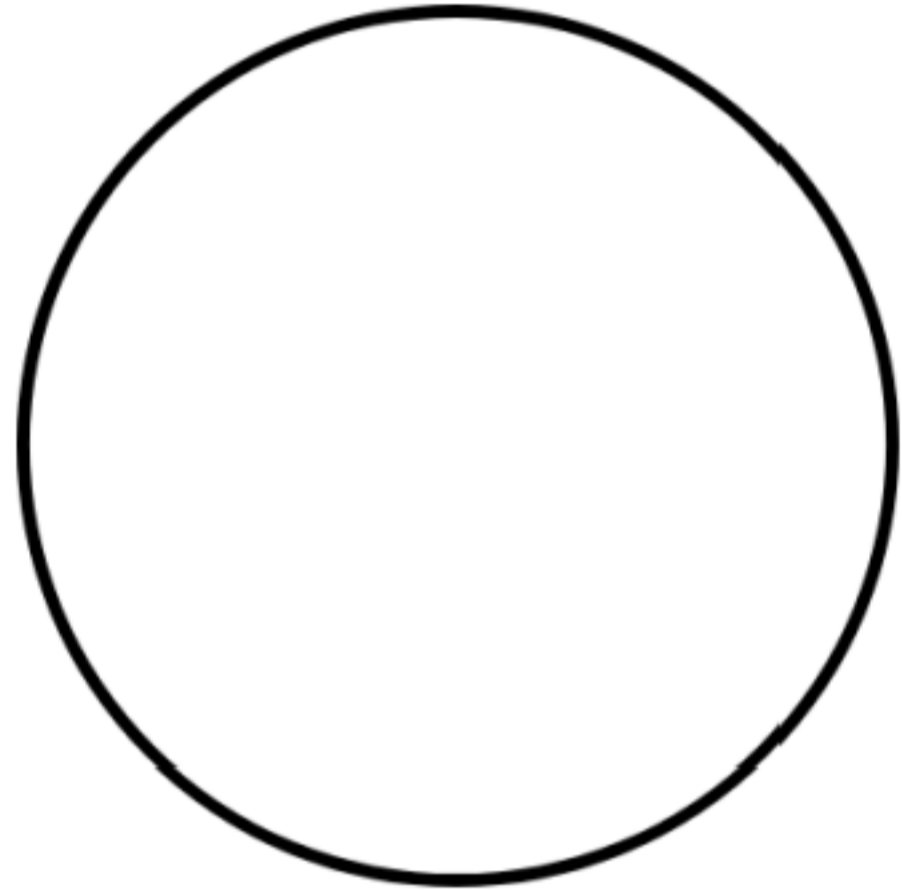
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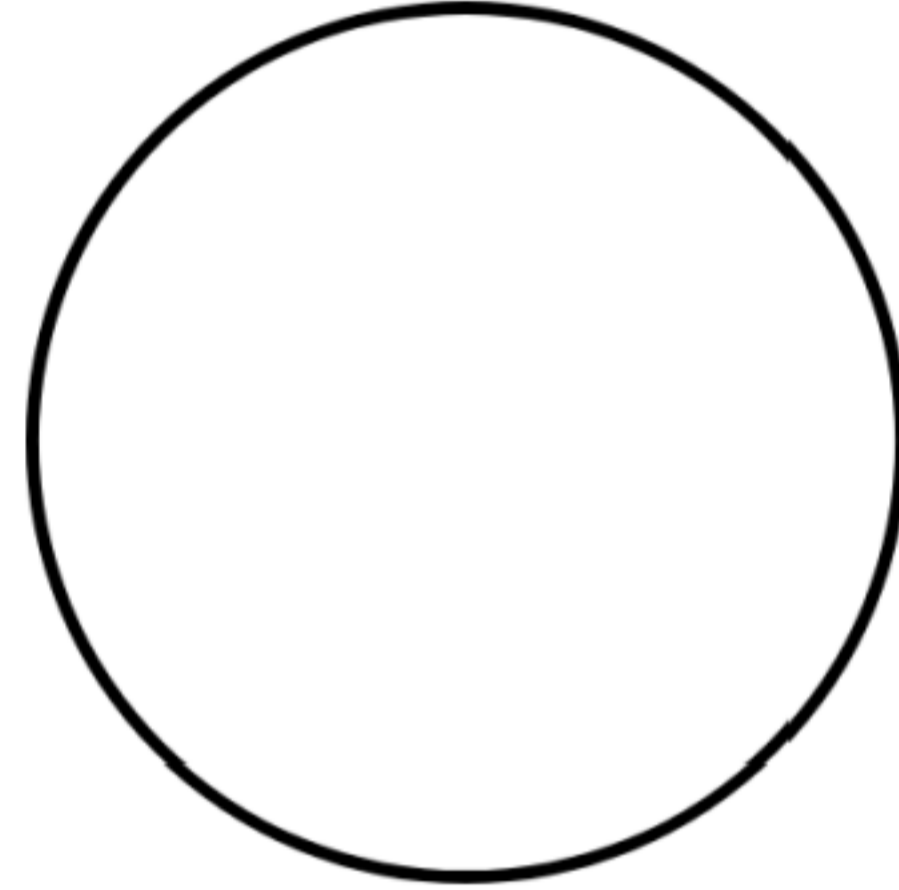
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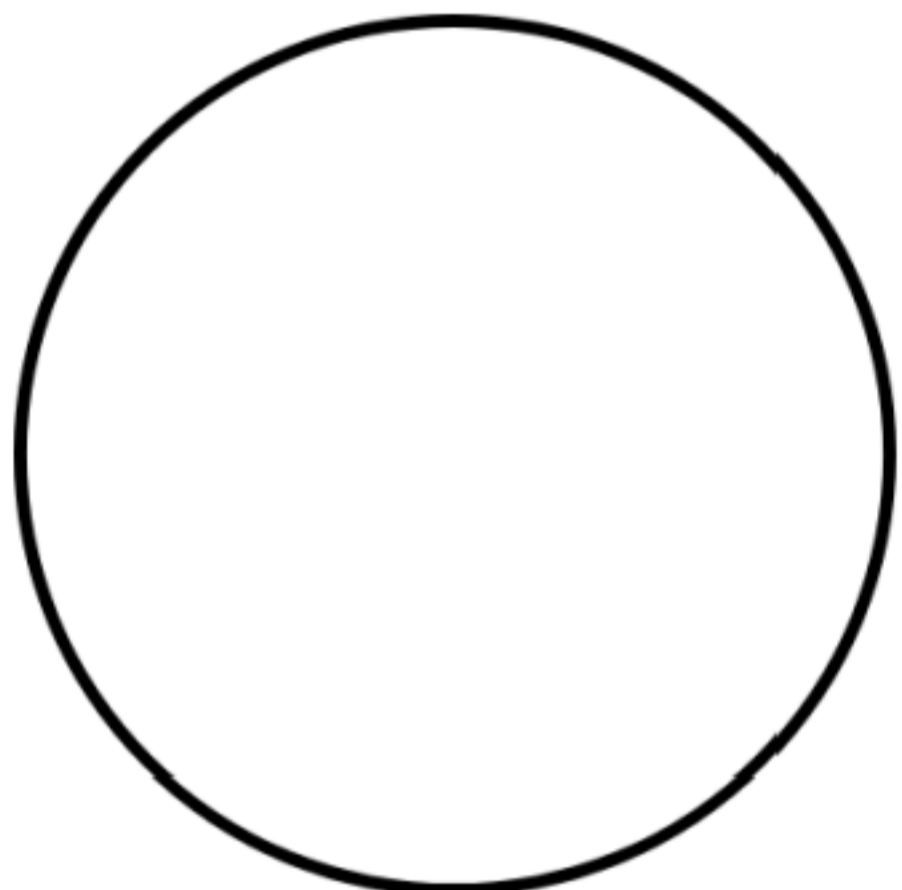
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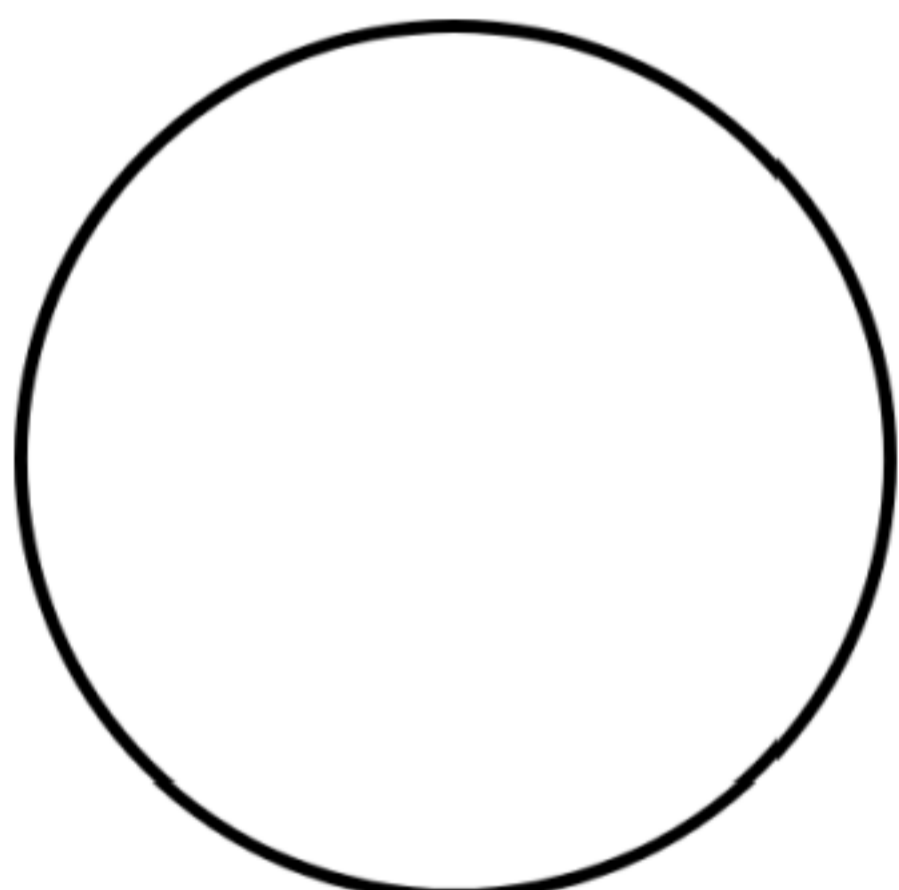
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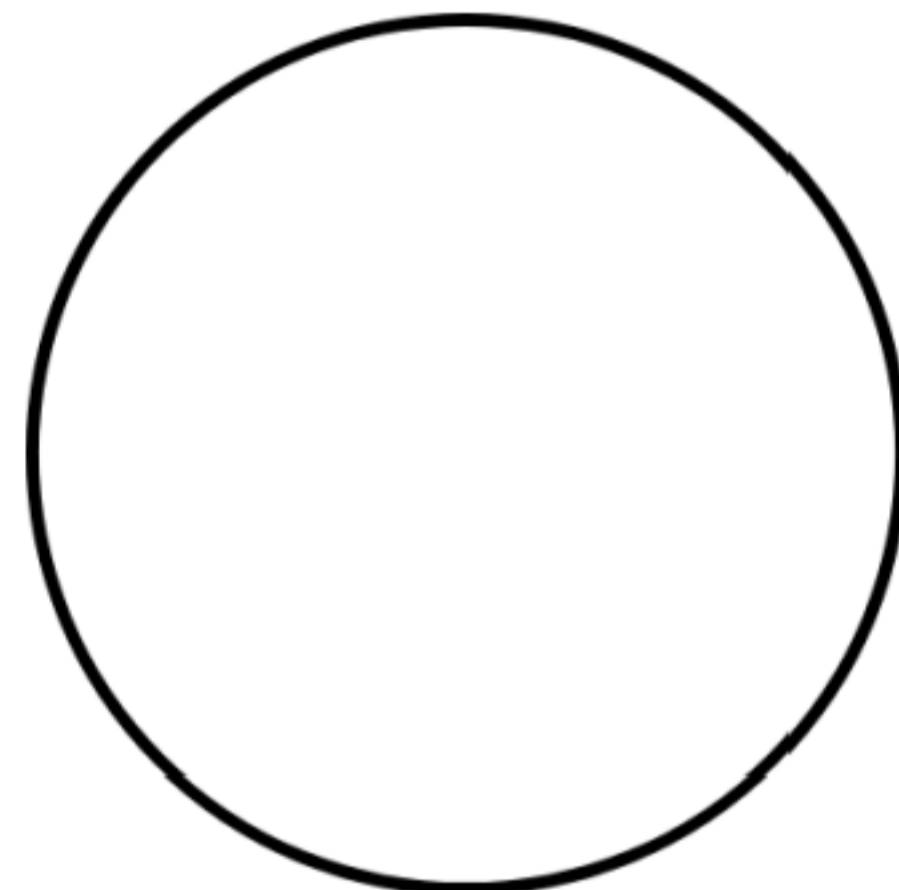
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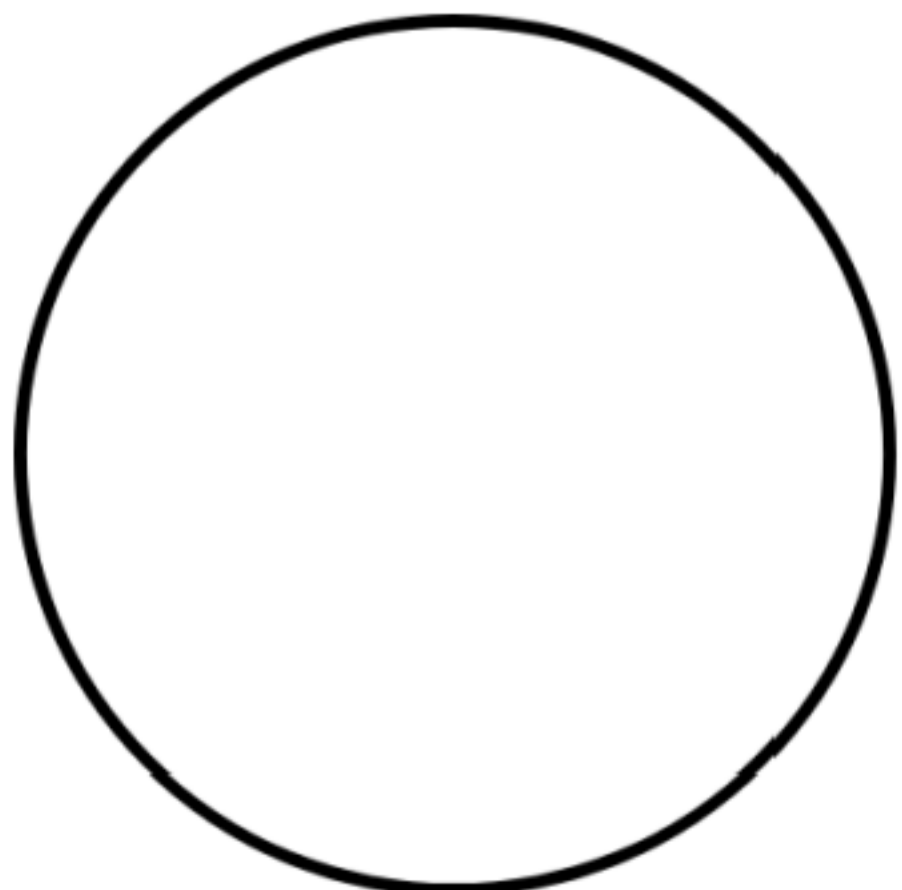
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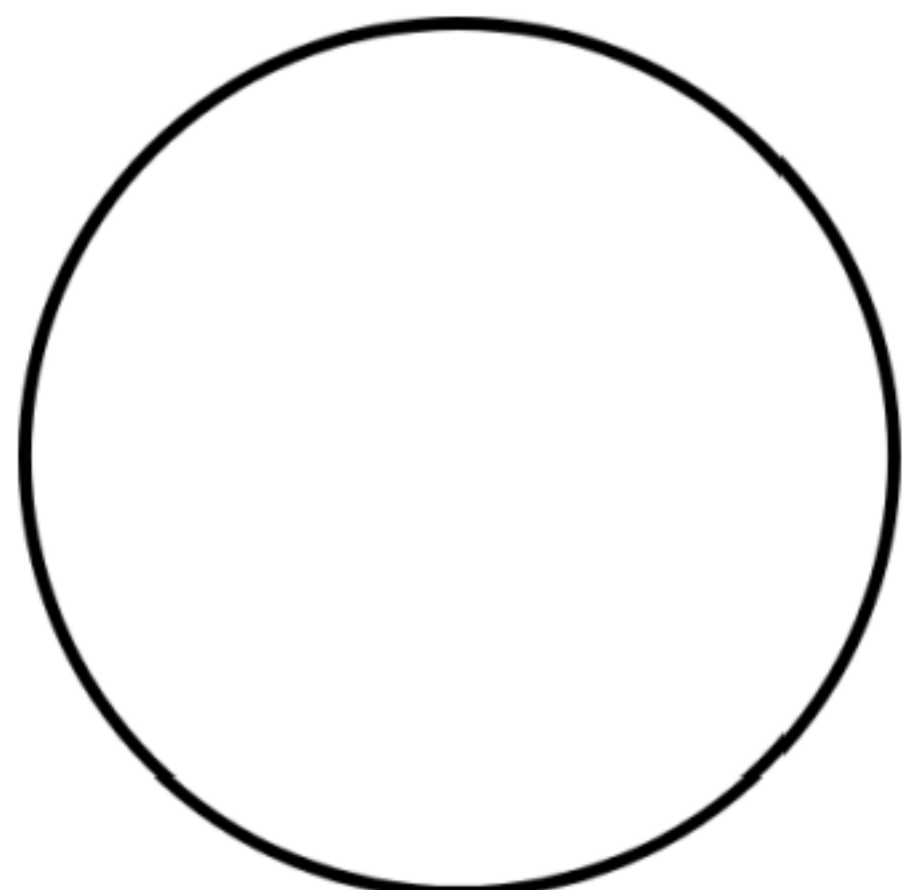
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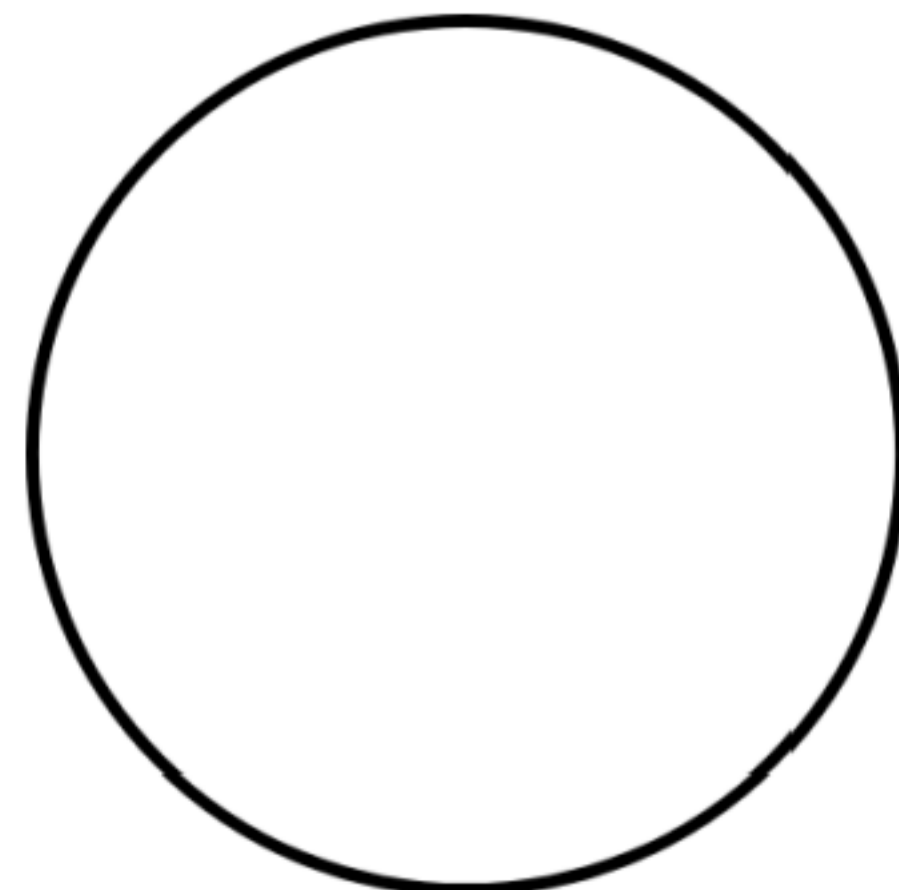
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**TIME**  
**SKY CONDITIONS**



**DATE**  
**TIME**  
**SKY CONDITIONS**






# Stargazing

## LOG BOOK



**NAME OF ASTRONOMER** \_\_\_\_\_

**DATE**  
**TIME**  
**LOCATION**

**SKY CONDITIONS** 

**CLEAR**   **CLOUDY**   **VERY CLOUDY**

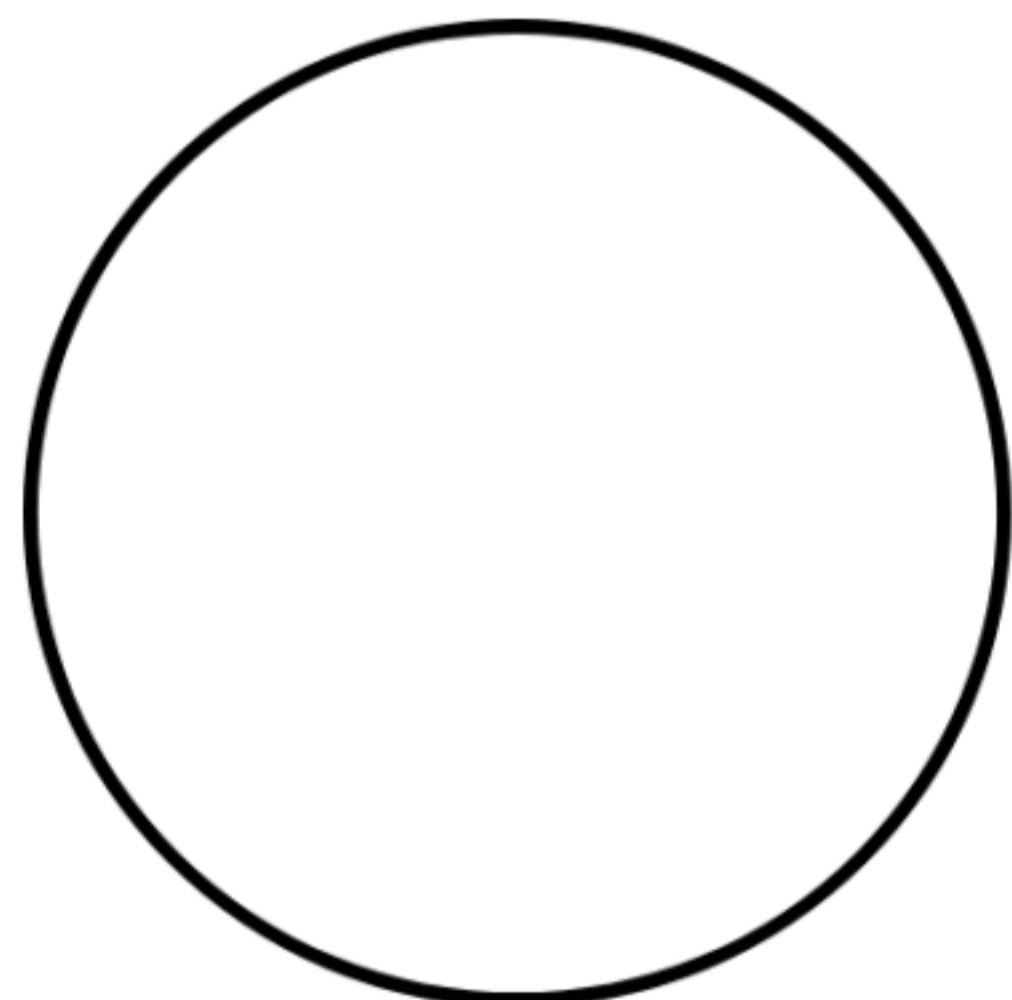
    

**DRAW THE SKY**


**EQUIPMENT USED**

**MAGNIFICATION**

**MOON PHASE**



**NOTES**






# Stargazing

## LOG BOOK



**NAME OF ASTRONOMER** \_\_\_\_\_

**DATE**  
**TIME**  
**LOCATION**

**SKY CONDITIONS** 

**CLEAR**   **CLOUDY**   **VERY CLOUDY**

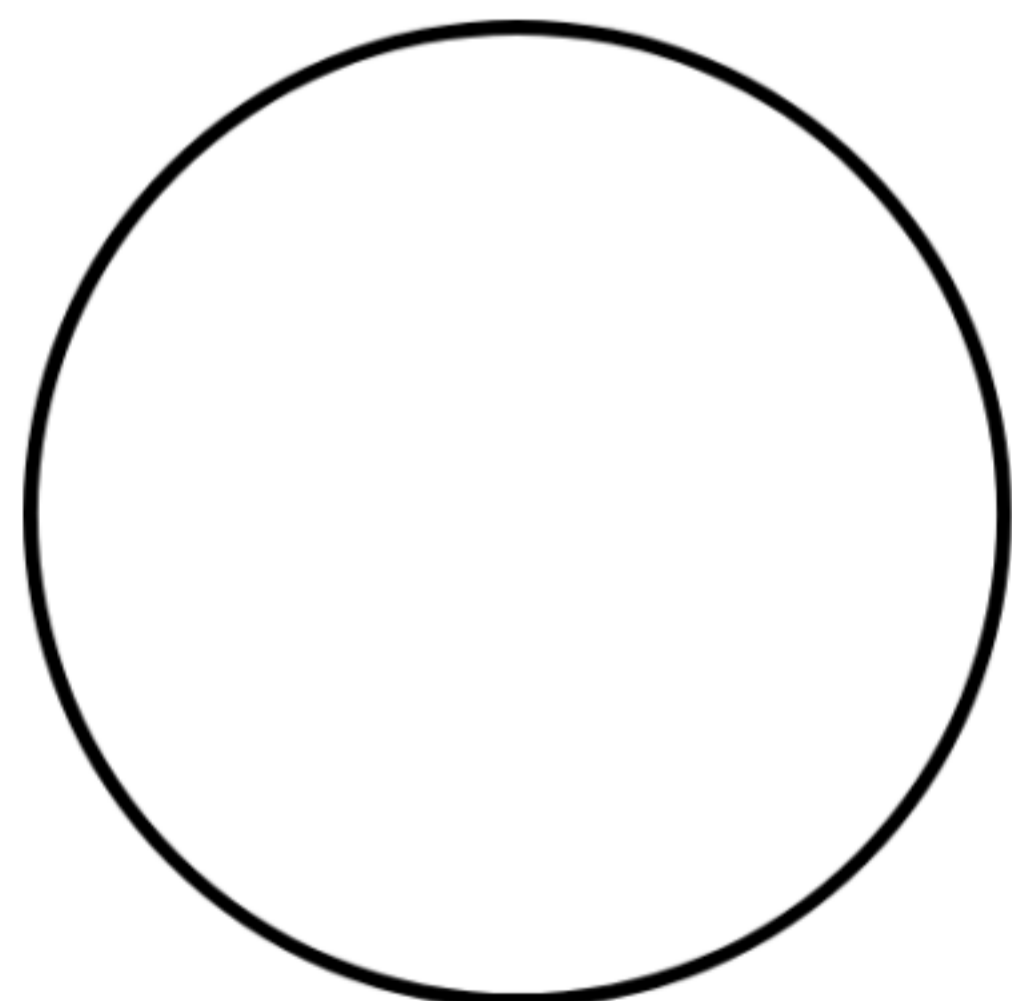
    

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**NOTES**

