

CREATIVE SESSION 3

THE MOON'S MOVEMENTS

ABOUT THE MOON'S MOVEMENTS

Every day, the moon is highest in the sky at a different time. Sometimes this happens in the middle of the night and at other times it will be in the middle of the day. While this may seem irregular, there is in fact a direct connection between the moon phase and when it 'culminates' (is highest in the sky). With the help of this model, you will be able to predict when the moon will culminate for every part of the lunar month.

As the earth spins on its axis, the moon appears to rise and fall in the sky. When your meridian (an imaginary line running from north pole to south pole, passing through your position) lines up with the moon, it will be highest in the sky for that day. With the sun, this happens every 24 hours at mid-day, but with the moon it is 50 minutes later every day because in the time your meridian has made a 360-degree spin, the moon has moved 12 degrees in its monthly orbit of earth and it takes another 50 minutes to realign.

By knowing the moon's position in relation to the sun and earth you can predict the time of day it will be highest - and from that you can work out the approximate time of moonrise and moonset by adding or subtracting around 6 hours. This takes a lot of visualisation, so to make life easier this model will help you work it out. By moving the moon to any phase and then reading the time in the 'window', you can clearly see when your meridian lines up with the moon throughout the lunar month, making it 'culminate'; at this moment it is highest in the sky and due south.

INSTRUCTIONS

Step 1

Cut out the white from pages 4/5/6 so you have three pieces.

Step 2

Remember to cut the 'windows' of the pieces on pages 5 and 6. It can be fiddly, but you'll see why they are important once the model is assembled. A Stanley knife or scalpel is ideal for this task.

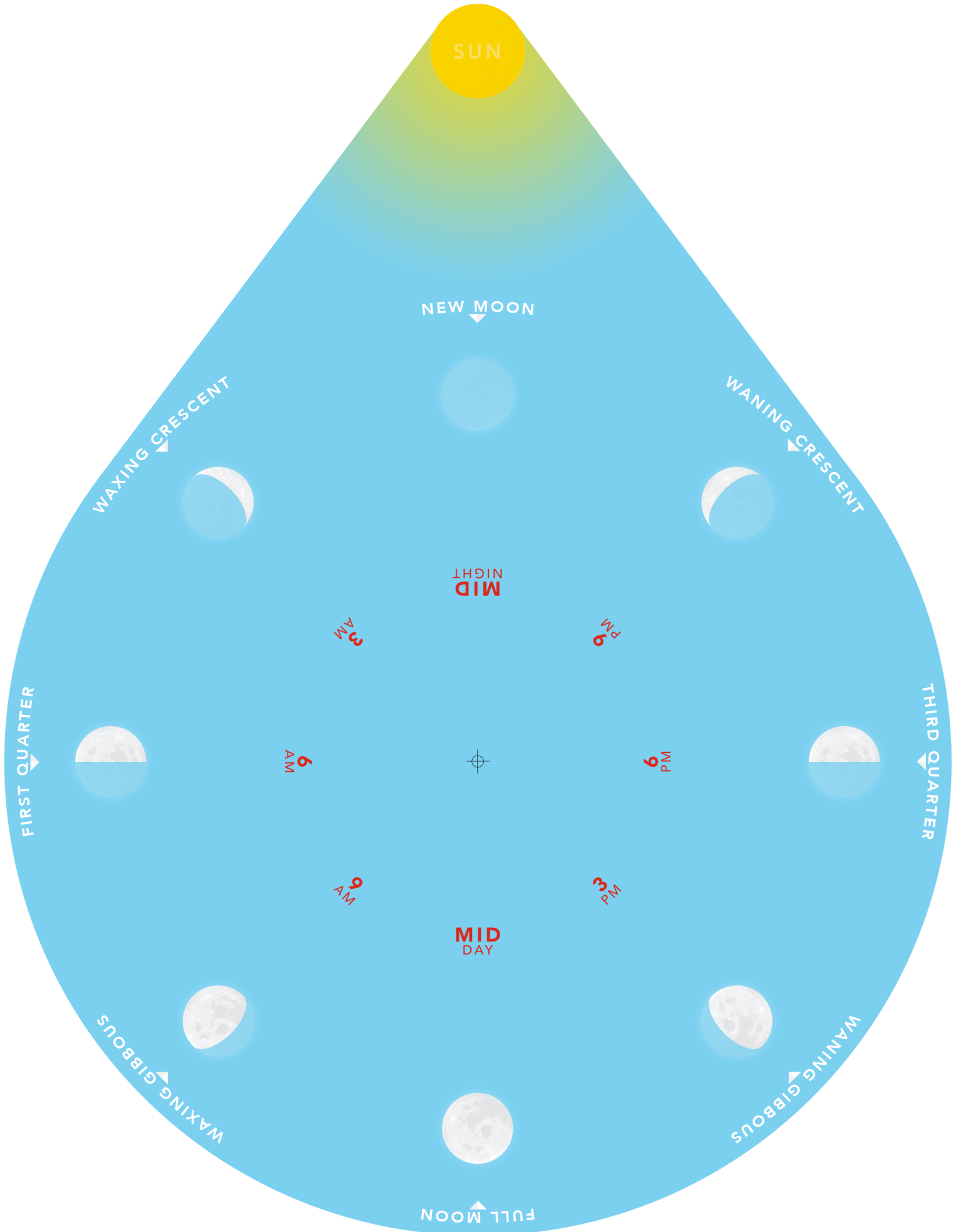
Step 3

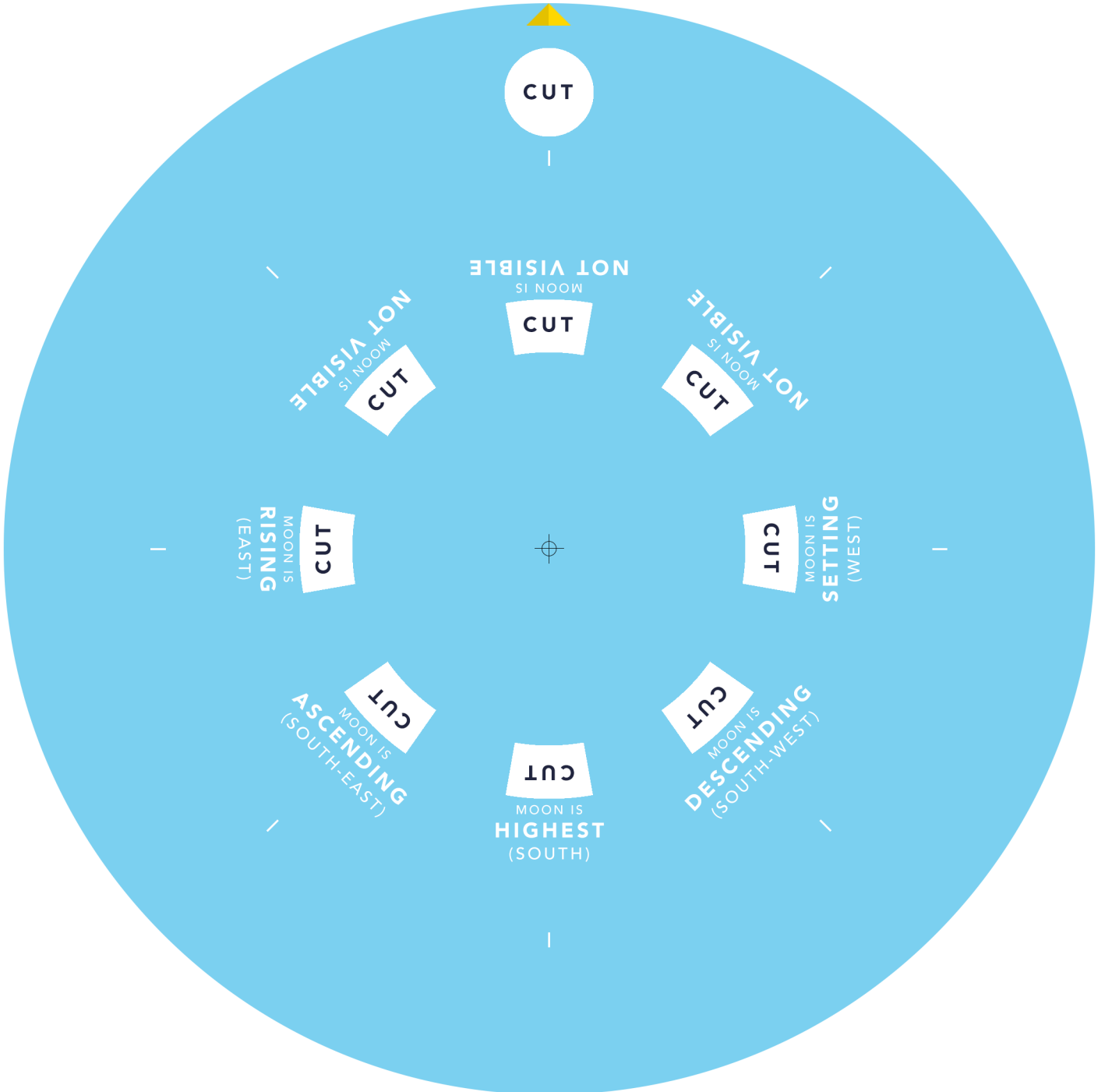
Lay the three pieces in order. The 'droplet' from Page 4 goes on the bottom, the circle from page 5 is in the middle and the 'earth' disc from page 6 goes on top.

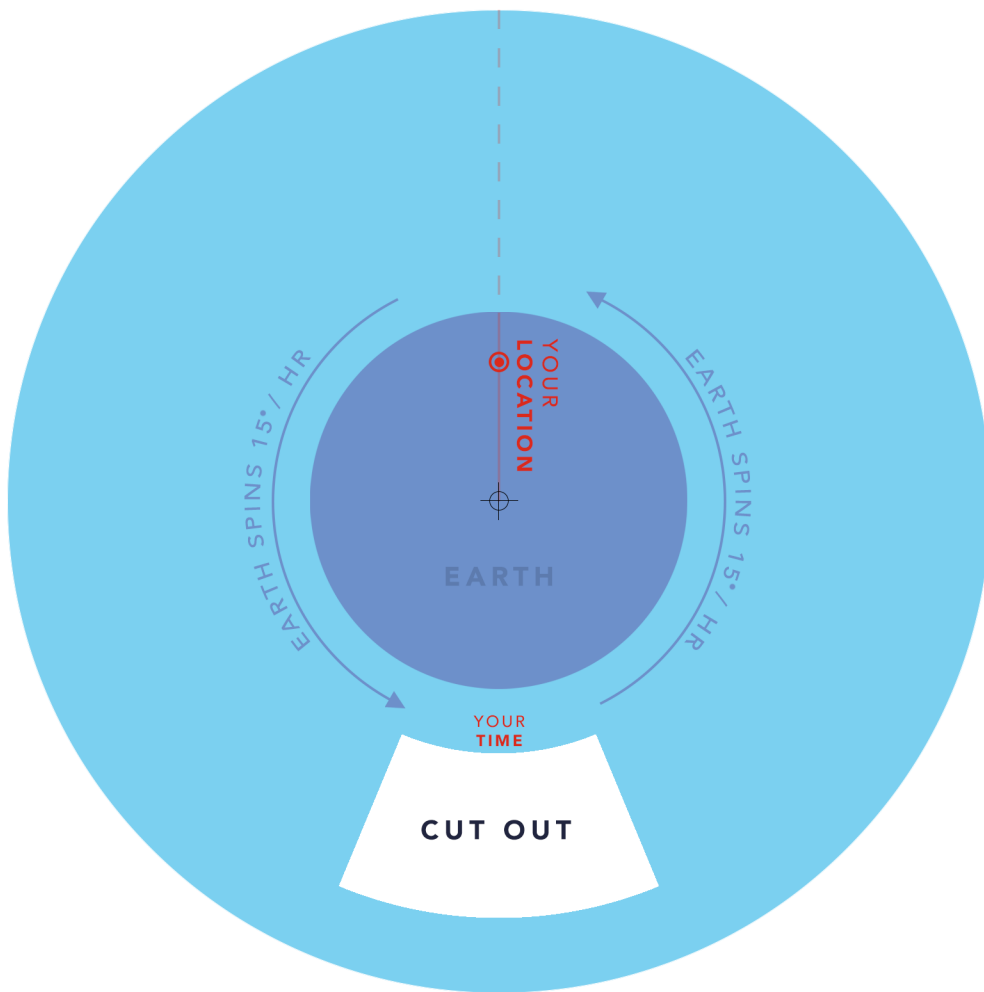
Step 4

Put a pin through the middle of each piece at the point marked \oplus . To see the time of moonrise/culmination/moonset for each moon phase, start by spinning the middle disc so you can see the moon phase in the outer window. Now twist the top 'earth' disc to read the times of moonrise, culmination and moonset at that phase.

Tip You will notice that the moon culminates when your meridian (the dashed line) points directly at it; the time this happens is determined by your meridian's position in relation to the sun. For example, because the New Moon and sun are aligned, they culminate at the same time. But a week later when the moon has orbited 90 degrees around the earth, your meridian aligns with it six hours after aligning with the sun, so the 'First Quarter' culminates around 6pm.









STEP 2

STEP 2

STEP 3



Share photos of your model!
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