

NAME:

Period:

DATE:

MOON ACTIVITY worksheet: TIDES & PHASES

PART A. Because the moon is close to the Earth, there are interactions between the Earth and the moon. One visible interaction is the effect of the gravitational pull of the moon on the Earth. This pull results in the rise and fall of the ocean level about ever 6 hours as the moon revolves around the Earth. **The rise and fall of the oceans are called: TIDES.**

Use *FIGURE 1* to answer the next 2 questions.

1 Which side of the Earth is facing the moon?

- A B C D

2 Which sides of the Earth are having:

- LOW TIDES: A B C D
- HIGH TIDES: A B C D

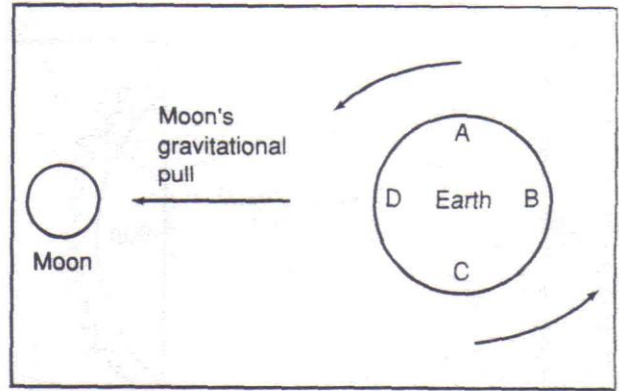


Figure 1

Use *FIGURE 2* to answer the next 2 questions.

3 Which sides of the Earth are having:

- LOW TIDES: A B C D
- HIGH TIDES: A B C D

4 How much time has passed between Figure 1 and Figure 2?

- _____ hours

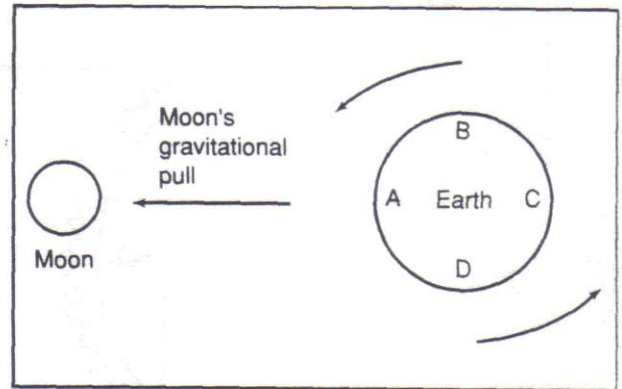


Figure 2

Use *FIGURE 3* to answer the next 2 questions.

5 Which sides of the Earth are having:

- HIGH TIDES: A B C D
- LOW TIDES: A B C D

6 How much time has passed between Figure 2 and Figure 3?

- _____ hours

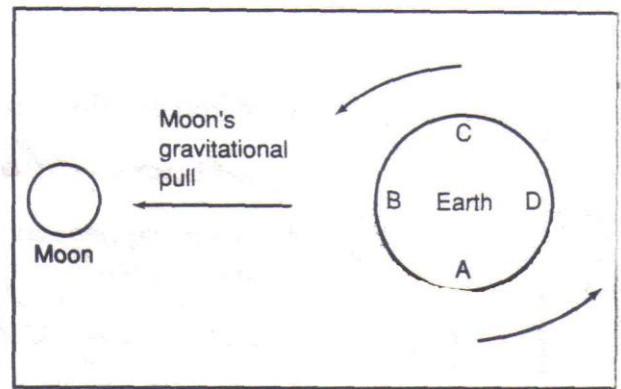


Figure 3

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PART B. When the moon is at its FULL and NEW phases, the Earth has higher tides and lower tides than at other times. These tides are called **Spring tides** and they *occur twice a month, when the sun and the moon line up with the Earth*. The increased effect of the sun's gravity on the earth causes the ocean bulges to become larger.

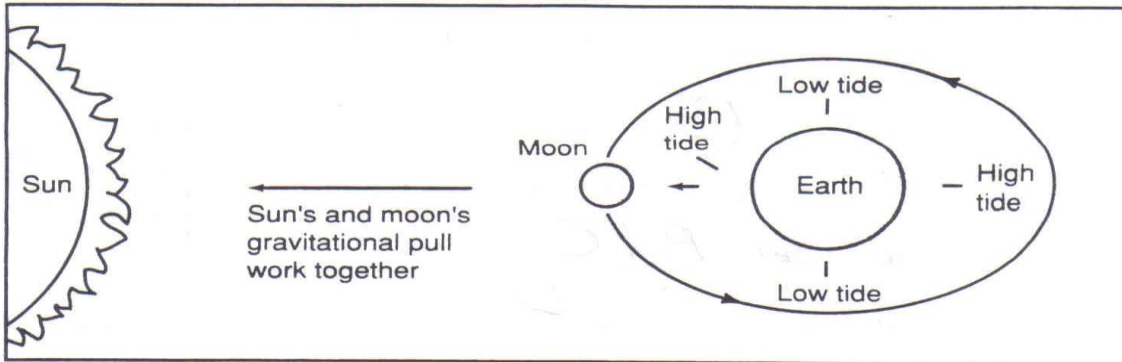


Figure 1 New moon

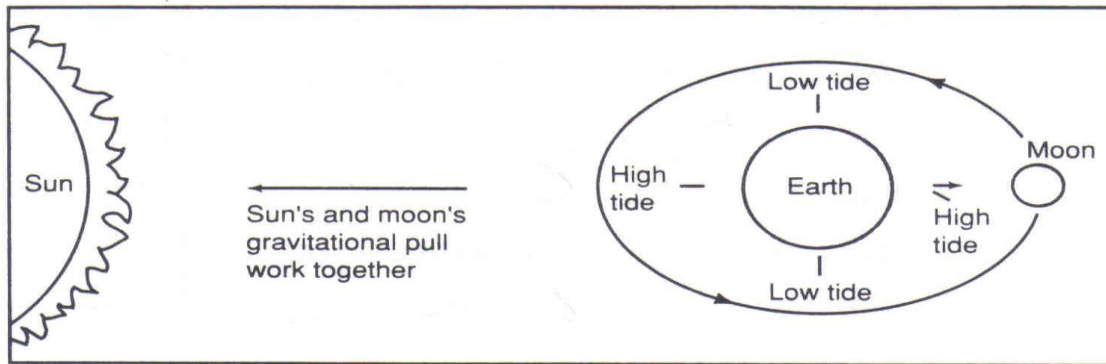


Figure 2 Full moon

- 7 When are the sun, moon, and Earth in a line?
 - New 1st quarter Full 3rd quarter
- 8 What happens to the pull of gravity on the Earth when the sun, Earth, and moon are in a line?
- 9 What are the unusually high and low tides called?
 - Spring tides Neap tides High tides Low tides
- 10 How often do the unusually high and low tides occur?
 - Once per week Once per month Once per year Not at all
 - Twice per week Twice per month Twice per year Every blue moon
- 11 At which moon phases do the spring tides take place?
 - New 1st quarter Full 3rd quarter

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PART C. During the first and last (3rd) quarter phases, the moon's gravitational pull on the oceans is partially canceled out by the sun's gravitational pull. This results in tides that are not very high and not very low. These tides are called **Neap tides** and they *occur twice a month*

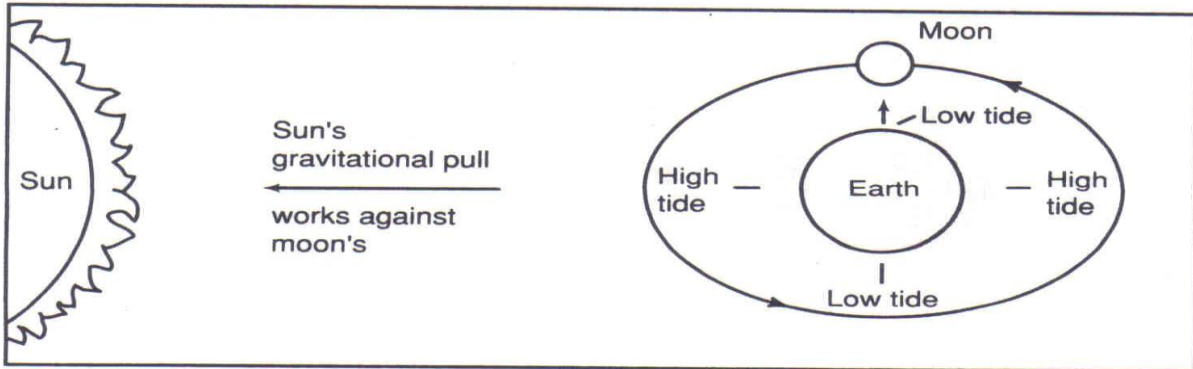


Figure 3 First-quarter moon

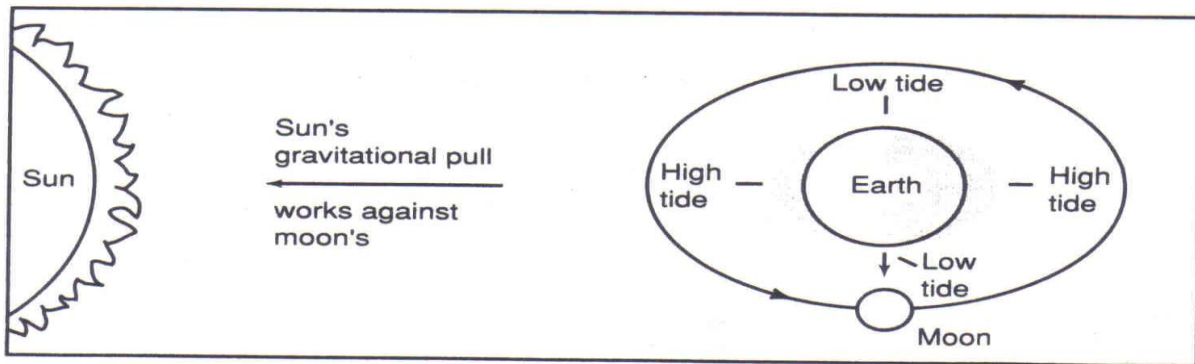


Figure 4 Last-quarter moon

- 12 When are the moon and sun at right angles?
 - New 1st quarter Full 3rd quarter
- 13 What happens to the pull of gravity when the moon and sun are at right angles?
- 14 What kinds of tides occur when the moon and sun are at right angles?
- 15 What are tides that are not very high and not very low called?
 - Spring tides Neap tides High tides Low tides
- 16 How often do these tides occur?
 - Once per week Once per month Once per year Not at all
 - Twice per week Twice per month Twice per year Every blue moon
- 17 At which moon phases do these tides take place?
 - New 1st quarter Full 3rd quarter

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PART D. Complete the following:

New moon

1st quarter moon

Full moon

3rd quarter moon

Waxing Crescent

Waxing Gibbous

Waning Crescent

Waning Gibbous

- _____ 18 Phase of the moon when you see only half of the lighted side after a full moon
- _____ 19 Phase that starts just after the full moon
- _____ 20 Phase when the lighted half of the moon is facing the sun and the dark side faces Earth
- _____ 21 Waxing phase of the moon when you can see half of the lighted side, or one-quarter, of the moon's surface
- _____ 22 Phase of the moon when the half of the moon's surface facing Earth is lighted
- _____ 23 Waxing period when more than one-quarter but less than half of the lighted side of the moon's surface can be seen
- _____ 24 Occurs just before a new moon

Maria	Craters	Ejecta	Rays	Rilles	Highlands	Regolith
Moon phases		Eclipse		Waxing	Waning	

- _____ 25 Dark-colored, relatively flat regions of lava on the moon's surface?
- _____ 26 Changing appearances of the moons as seen from Earth
- _____ 27 A depression caused by impact, or collisions into the surface
- _____ 28 Moon is covered with a layer of dust and small rock fragments
- _____ 29 Material blasted out during the impact fell back to the surface
- _____ 30 Some craters have long trails of ejecta that radiate outward from the crater
- _____ 31 Other evidence that the moon once had active volcanoes may be the long valleys
- _____ 32 Mountain ranges on the moon are called
- _____ 33 Period when the amount of the lighted side that can be seen becomes increasingly smaller.
- _____ 34 Period after a new moon when more and more of the lighted side of the moon becomes visible
- _____ 35 Occurs when the moon moves directly between the sun and Earth and casts a shadow on part of Earth