Sky Science - Practice quiz

Part A: Stars

The ancient Greeks recognized that planets were different from stars. The Greeks referred to the planets as the "wandering stars". The stars always appeared in the same place relative to each other, but the planets did not. A planet may be exactly next to a certain star tonight, but two months from now the planet will be in a different position. The planets appear to move because they orbit around the sun.

1. During the night, stars appear to flow across the sky from east to west. This is due to

   A. the gravity of the sun

   B. the rotation of the earth

   C. the movement of the stars

   D. the effect of prevailing winds

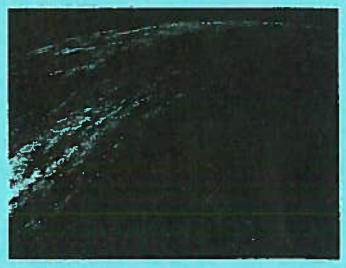
2. During certain seasons some stars are visible but not during other seasons. This change is due to

   A. the movement of the stars

   B. the movement of the universe

   C. whether the stars are near or far

   D. the earth's revolution around the sun



3. Show whether each body *reflects* or *emits* light by writing the name of each body in the correct column in the table below.

star	Polaris	Moon
asteroid	meteor	comet
Sun	Earth	Mars

Emits light	Reflects light

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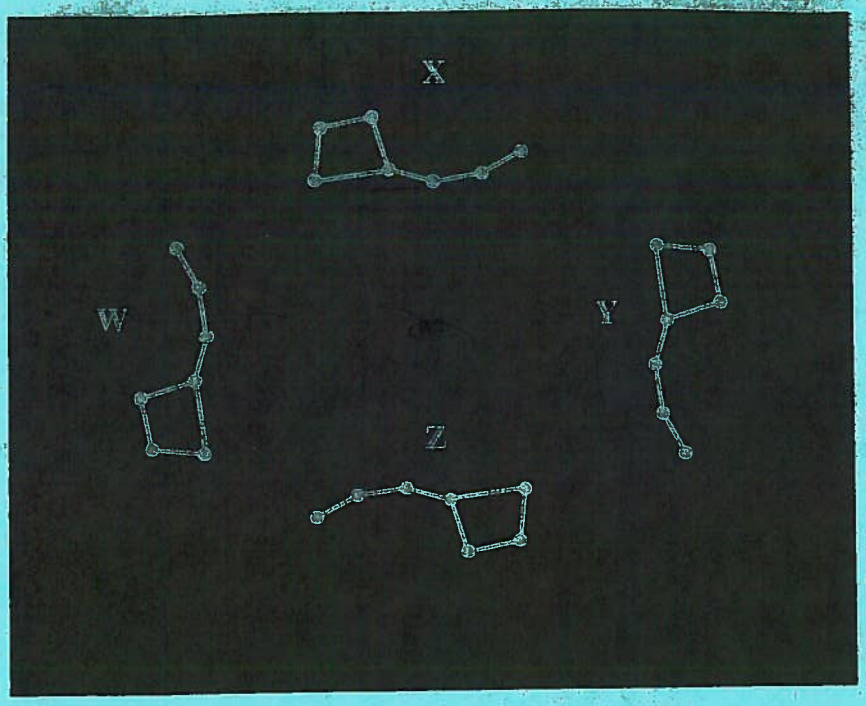
Positions of the Big Dipper as It Is Viewed from a Specific Location over the Course of a Year



4. If the position marked W on the diagram above represents the Big Dipper in June, then the position marked Y represents the Big Dipper in

A. March
B. May
C. September
D. December

5 Which of these star magnitudes would be the brightest?

a. -1
b. 0
c. 3
d. 6

6. The source of light that enables astronomers to see Jupiter through a telescope is

A. the moon
B. the sun
C. Jupiter
D. Earth

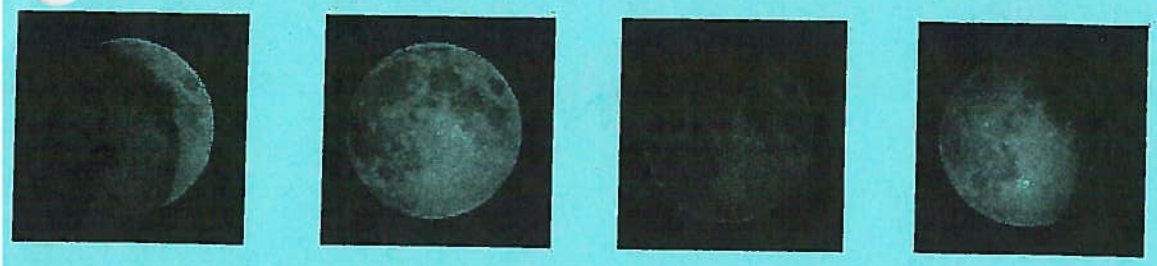
Ursa Major is a cluster of stars that we associate with an image. Such images are called

a. Planets
b. Galaxies
c. Solar systems

Sky Science: Practice Quiz

Part B: The Moon.

8. Phases of the Moon: **Name** each phase of the moon ***and*** put them in order by numbering them from 1 – 8, beginning with the New Moon.



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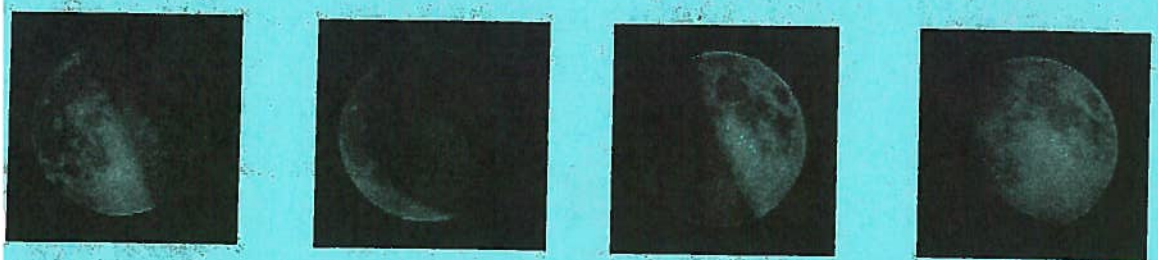

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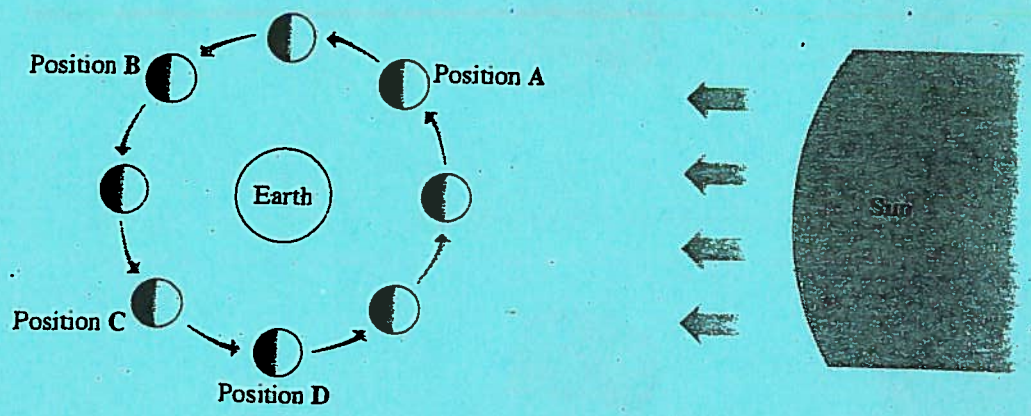
The moon always reflects the same amount of light from the sun; however, the amount of this reflected light that is visible on Earth varies with the position of the moon. The positions of the moon orbiting Earth are shown below.



In which of the positions labelled on the diagram is the **least** amount of light reflected by the moon visible on Earth?

A. Position A
B. Position B
C. Position C
D. Position D

The moon takes how many days to complete its phases?

a. 27.3 days
b. 365 days
c. 29.5 days
d. 36.5 days

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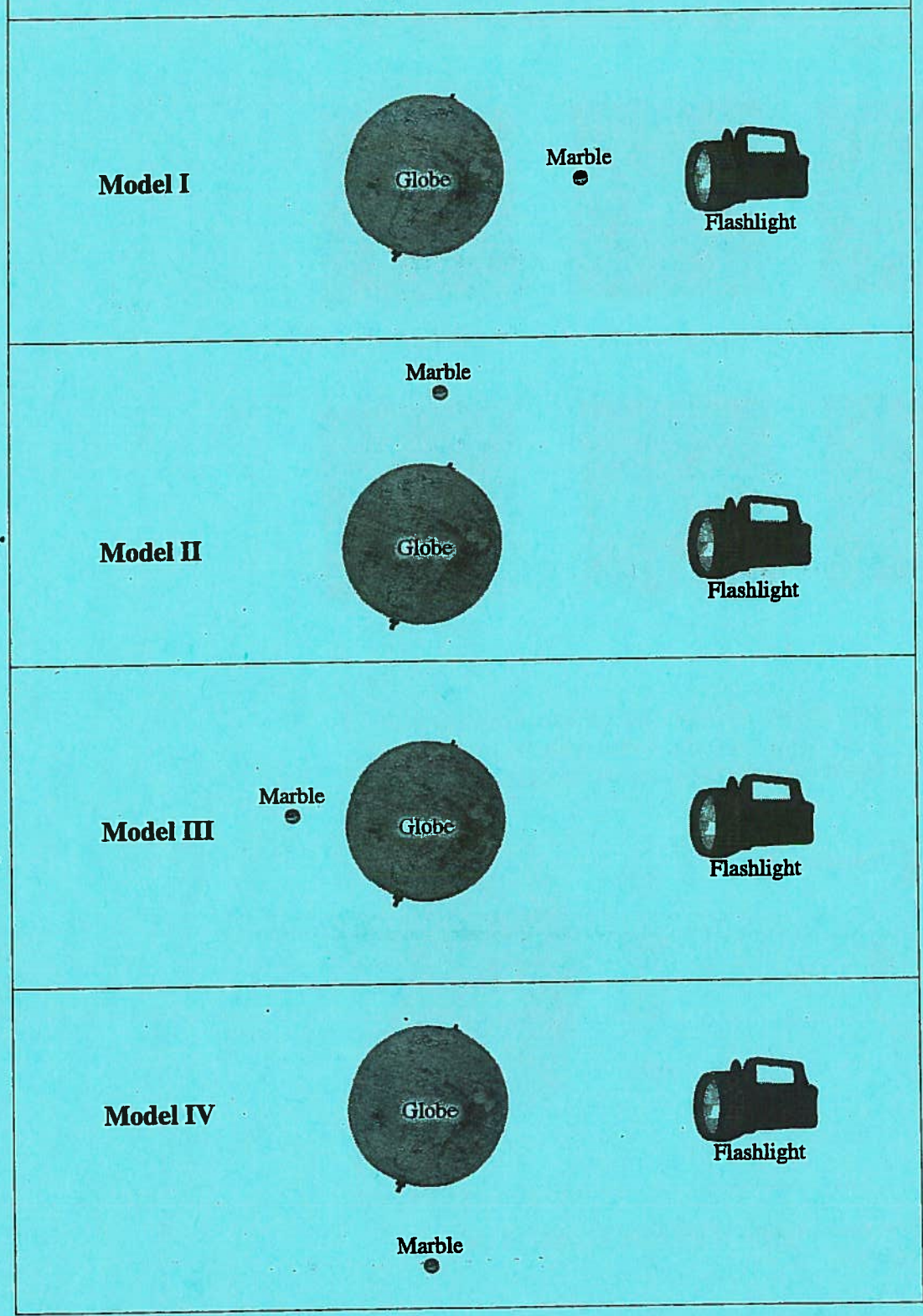
To model the phases of the moon, a student uses a globe to represent Earth, a marble to represent the moon, and a flashlight to represent the sun.



11. In which of the models has the student positioned the marble to represent the moon in its last quarter phase, as observed from Earth?

A. Model I
B. Model II
C. Model III
D. Model IV

Moon (cont.)

2. Why do we only see one side of the Moon when we are on Earth? Answer fully and clearly.

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/3

Sun / Seasons.

3. Which of the following statements provides an explanation for why there are four distinct seasons in Alberta?

A. Earth is tilted 23.5 degrees and remains tilted in the same direction as it orbits the sun.

B. Earth is tilted 23.5 degrees and remains tilted in the same direction as the sun orbits it.

C. The sun is farther away from Earth in winter and closer in summer.

D. The sun is farther away from Earth in summer and closer in winter.

4. Draw the position of the Earth around the Sun at the following times:

a. Vernal Equinox
b. Summer Solstice
c. Approximately November 14
d. Approximately January 28

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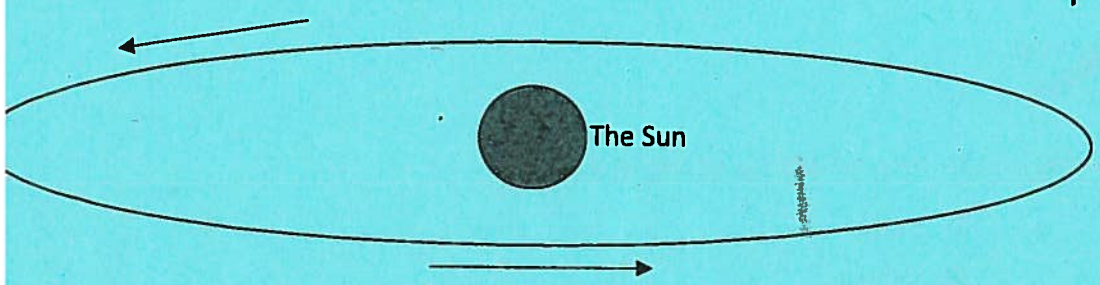
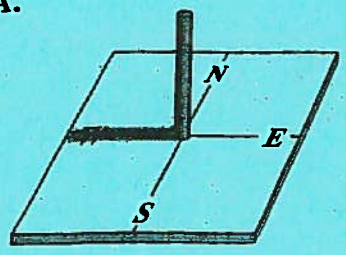


5. If it was summer in Edmonton, in Australia it would be

a. fall.
b. winter.
c. spring.
d. summer.

6. As part of a display, Valérie made a sundial. Which of the following diagrams illustrates the shadow that the sun would cast just after sunrise on a March day in Alberta?

A.



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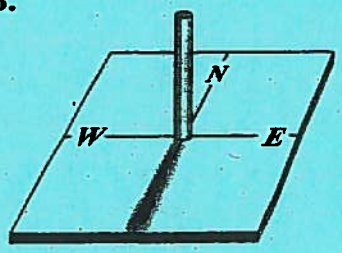

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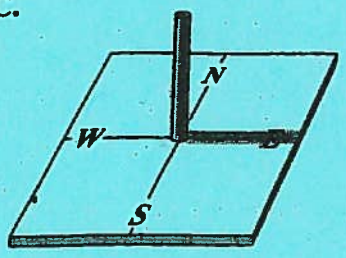
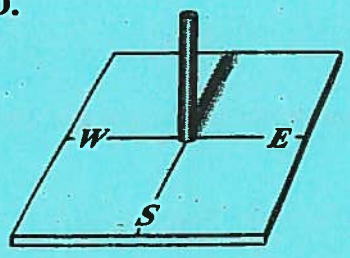


D.



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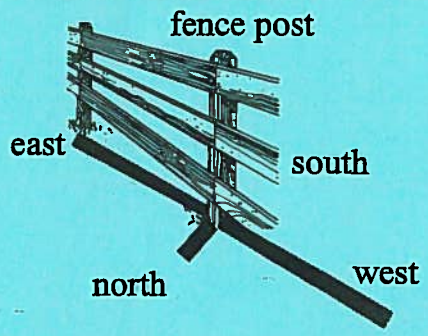
Use the following information to answer the next few questions.

Mark helped his father work on the family farm. He liked to think of the fence posts as sundials and he tried to estimate the time based on the angle of the post's shadow. The following diagram shows a fence post and the shadows thrown from it at different times during the day.



17. When the shadow is pointing to the west, what time of day is it?

A. Morning **B** Noon

C. Afternoon **D.** Evening

3. What order do these shadows fall from morning to evening?

1 - east

2 - north

3 - west

morning _____ _____ _____ evening

3

5

Practice test

Sun/Seasons (cont.)

9. ng what time of day would you expect the shadow to be the longest?

A. 9:00 a.m.

B. 12:00 noon

C. 12:00 midnight

D. 3:00 a.m.

Mark knew that a problem with sundials is that you can never use them in

A. the winter

B. the summer

C. the early morning

D. the middle of the night

A student records the times at which the sun rises and sets over a period of a week.

Day	Time of Sunrise	Time of Sunset
Monday	7:33 A.M.	7:12 P.M.
Tuesday	X	Cloudy
Wednesday	7:37 A.M.	7:08 P.M.
Thursday	Y	7:06 P.M.
Friday	7:41 A.M.	7:04 P.M.
Saturday	7:43 A.M.	Z
Sunday	7:45 A.M.	7:00 P.M.

Which of the following rows identifies the times that replace X, Y, and Z in the chart?

Row	X	Y	Z
A.	7:34 A.M.	7:38 A.M.	7:01 P.M.
B.	7:34 A.M.	7:38 A.M.	7:02 P.M.
C.	7:35 A.M.	7:39 A.M.	7:02 P.M.
D.	7:35 A.M.	7:39 A.M.	7:03 P.M.

Use the following table to answer question 23.

Angle of Sun at Solar Noon and Number of Daylight Hours

Location	Angle of Sun at Noon (December 21)	Amount of Daylight (December 21)	Angle of Sun at Noon (June 21)	Amount of Daylight (June 21)
1	13°	8 h, 12 min	60°	17 h, 48 min
2	16°	8 h, 31 min	63°	17 h, 29 min
3	19°	8 h, 50 min	66°	17 h, 10 min
4	21°	9 h, 9 min	69°	16 h, 51 min

22. Based on the information in the table above, the **best** prediction of the number of daylight hours that location 3 would have on February 21 is approximately

A. 17 h
B. 15 h
C. 10 h
D. 8 h

23. Does the sun move?

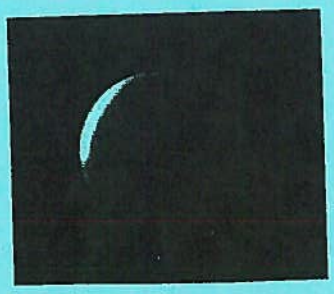
A. Yes, since it is on the edge of a galaxy that is spinning.

B. Yes, since it is orbiting the solar system.

C. No, since it is the centre of the universe.

D. No, since it is the centre of the solar system.

24. Stefan cautioned the students about safety when watching a solar eclipse. Sometimes people make the mistake of



A. wearing welders' goggles

B. looking at the eclipse with unprotected eyes

C. watching the eclipse on television

D. not listening carefully for the sounds of an eclipse

CHALLENGER QUESTION

25. In a tropical country, the sun sets at about 6 pm everyday. Predict what time the sun would rise in the tropical country.

A. About 6:00 a.m. everyday

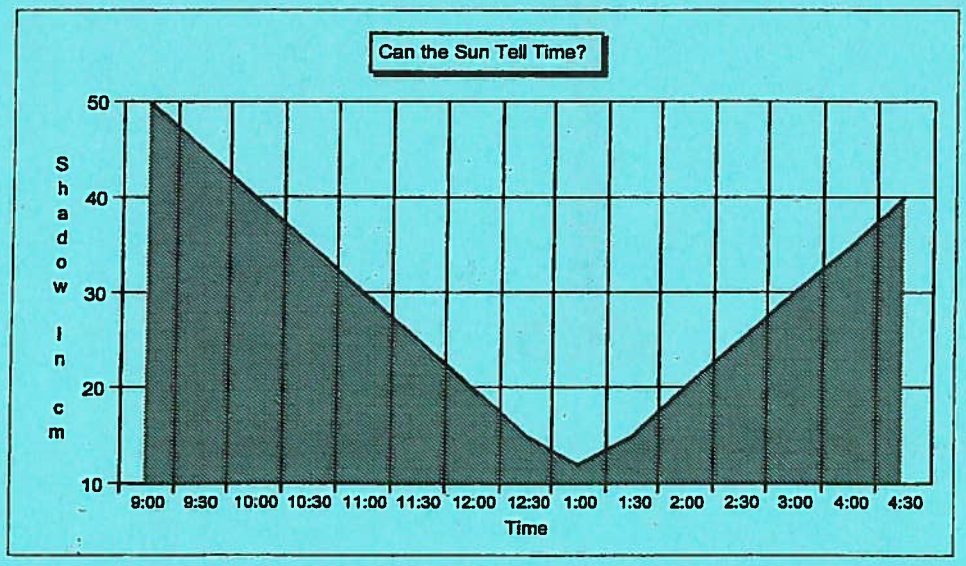
B. About 8:00 a.m. everyday

C. 5:00 a.m. in the summer, 7:00 a.m. in the winter

D. 7:00 a.m. in the summer, 5:00 a.m. in the winter

Bob told his younger brother Marc they could tell the time with their own shadow clock. Together they made one and graphed their results. Use the graph to answer the following questions.

This graph shows the length of the shadows cast by a stick at various times throughout the day on July 3, 1996.



26 a. Describe the **pattern** that Bob's graph shows.

_____

_____

_____

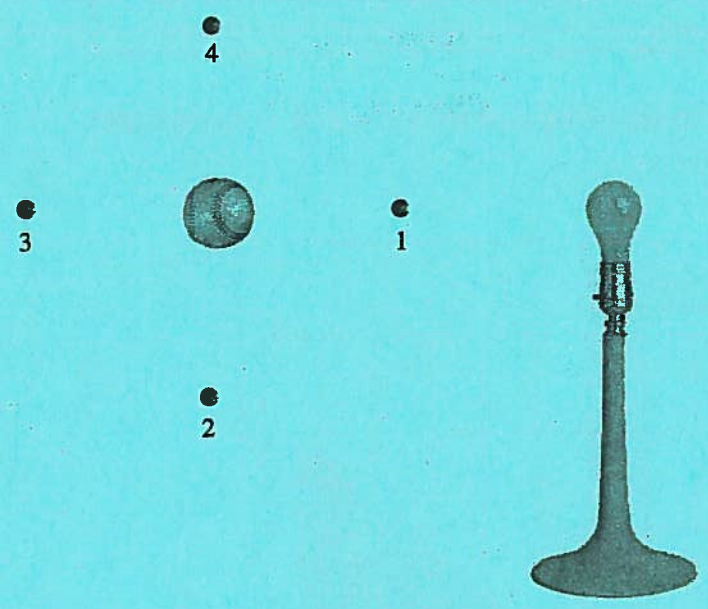
27 b. Using the information on this graph, what can you **infer** about the weather at the time Bob and Marc collected the data?

_____

_____

_____

A science class uses a marble, a softball, and a lamp to represent the moon, Earth, and the sun respectively, as shown in the model below.



A solar eclipse would **most likely** be modelled when the marble is in position

A. 1
B. 2
C. 3
D. 4

lanets / Outer Space

Celeste read over the fact sheet of her favourite planet, Jupiter.

Jupiter

Average distance from sun:	778 000 000 kilometers
Diameter:	142 000 kilometers
Length of a year:	11.86 Earth years
Length of a day:	0.41 Earth days
Average surface temperature:	123.5 degrees Celsius
Number of known moons:	16

29 From the data, Celeste can infer that Jupiter
a. has weaker gravity than Earth.
b. has denser atmosphere than Earth.
c. takes a longer time than Earth to make a complete turn on its axis.
d. takes a longer time than Earth to make a complete orbit around the Sun.

3D Celeste's new book states that Jupiter has 16 known satellites (or moons). Her older book lists 14 satellites. The information is different in the two books because scientists are constantly
a. discovering new information.
b. disagreeing about new information.
c. making mistakes about new information.
d. telling each other about new information.

Practice TCS

Outer Space

Celeste did a planet quiz in her new book. She used a black marker to shade in the boxes by her answers.

Planet Quiz	
A. The planet closest to the Sun is: ☐ Earth ☐ Venus ■ Mercury ☐ Mars	B. The planet farthest from the Sun is: ☐ Earth ■ Pluto ☐ Jupiter ☐ Saturn
C. The smallest planet in our Solar System is: ☐ Mercury ■ Pluto ☐ Venus ☐ Neptune	D. The largest planet in our Solar System is: ☐ Earth ☐ Uranus ■ Saturn ☐ Jupiter

31. She checked the answer key and
    a. A and D are correct.
    b. B and D are correct.
    c. C and D are correct.
    d. A, B and C are correct.

32. Mr. Kozak asked the students to imagine the following situation. You live far in the future when space travel over immense distances can be achieved almost instantaneously. You are writing to your friend who has moved to another galaxy. What return address will you put on your letter? Use at least eight lines.

_____

_____

_____ 2

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/2

3. All stars, planets and other forms of matter known to exist make up the

A. galaxy

B. big bang

C. universe

D. solar system

4. Which of the following planets is **larger** than Earth?

A. Mercury
B. Neptune
C. Venus
D. Mars

5. In which of the following lists are parts of space ordered from smallest to largest?

A. Solar system, galaxy, universe
B. Galaxy, universe, solar system
C. Milky Way, solar system, universe
D. Universe, Milky Way, solar system

6. Planets are **best** viewed through telescopes that are positioned

A. at sea level
B. near the equator
C. away from city lights
D. away from large buildings

The following chart shows the approximate distance of several planets from the sun and the time required for the planets to revolve around the sun.

Planet	Approximate distance from the sun (million kilometres)	Time required for planet to revolve around the sun (Earth units)
Mercury	58	88 days
Venus	108	225 days
Earth	150	1 year
Jupiter	778	12 years
Uranus	2 871	84 years
Neptune	4 498	165 years

7. It can be inferred from the chart above that the planet Saturn, which is approximately 1 430 million kilometres from the sun, revolves around the sun approximately once every

A. 3 years
B. 10 years
C. 30 years
D. 100 years