[](http://www.google.com.au/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&docid=Q-jachXC6K5l9M&tbnid=dEZcnnM6t4ztbM:&ved=0CAUQjRw&url=http://all-free-download.com/free-vector/vector-clip-art/tree_outline_clip_art_11785.html&ei=gkD1U_q5CIzp8AXO4oLQAQ&bvm=bv.73231344,d.dGc&psig=AFQjCNFOn96papxJpTkYcyqtzYCWu8mjvQ&ust=1408668120729314)Earth Science Year 7

Topic Test

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Total: 76 marks

Part A: Multiple-Choice (10 marks)

1. Which of the following are **all** planets?

**A** Mars, Earth, Pluto, Leo, Venus.

**B** Neptune, Uranus, Mars, Jupiter.

**C** Scorpio, Pluto, Neptune, Saturn, Sagittarius.

**D** Gemini, Cancer, Virgo, Pisces, Taurus.

2. Which of the following is true?

**A** different constellations can be seen in different positions at different times of the year.

**B** different cultures have developed different stories about the same constellations .

**C** Some constellations are only visible in the southern hemisphere and some in the northern hemisphere.

**D** all the statements are true.

3.Gravity is affected by:

**A** mass and distance.

**B** mass only.

**C** distance only.

**D** mass, distance and light.

4. In a solar eclipse which of the following occurs?

**A** Earth blocks the sunlight from the Moon.

**B** Moon blocks the sunlight from the Earth.

**C** Sun gets in the way of us seeing the Moon.

**D** a comet blocks the Sun.

5. In the phases of the moon a new moon appears as:

**A** a complete circle in the night sky.

**B** a half of the moon visible in the night sky.

**C** nothing visible in the night sky.

**D** almost all the moon visible in the night sky.

6. Which of the following are all natural satellites?

**A** moons, planets and the International Space Station.

**B** moons, planets and comets.

**C** Earth, Moon and spy satellites .

**D** International Space Station, comets and Jupiter.

7. Earth has 4 seasons because:

**A** it spins on its axis.

**B** it would be boring to have the same climate all year.

**C** of its orbit around the Sun.

**D** of the tilt of the axis.

8. The temperatures at the equator are hotter because?

**A** sunlight travels less distance before it hits the Earth’s surface.

**B** sunlight travels greater distance before it hits the Earth’s surface.

**C** the land absorbs more heat there.

**D** it is always summer.

9. Every four years we have a leap year because?

**A** it makes it interesting for people born on the 29th February.

**B** the earth is orbiting the Sun faster every four years.

**C** the Earth is orbiting the Sun slower every four years.

**D** it takes 365 ¼ days for the Earth to go around the Sun but you cannot have a ¼ day on a calendar.

10. Daylight hours are longest in summer and shortest in winter. An equinox is when there is equal amount of daylight hours as night hours. When would this occur?

**A** autumn only.

**B** autumn and spring.

**C** spring only.

**D** summer and winter.

**Part 2: Short Answer**

1. **Match** the following terms with their correct meaning. Note: not all words will be used.

Tides, astrology, satellite, constellation, lunar eclipse, Milky Way, solar eclipse, axis, ellipse, orbit, astronomy, phases, year, gravity, Orion, waves, equator, day,

a) A group of stars that forms a recognisable pattern in the night sky \_\_ constellation

b) An imaginary line connecting the North and South poles \_\_\_ axis

c) The time a planet takes to revolve once around the Sun \_\_ year

d) Force of attraction between masses \_\_\_\_ gravity

e) When the Earth blocks sunlight from reaching the moon \_\_\_\_ lunar eclipse

f) The path a planet takes around a star \_\_\_\_\_\_ orbit

g) Bulges in the ocean caused by the combined gravitational pull of the Moon and Sun

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ tides

h) The scientific study of stars, planets and other objects in space \_\_\_\_\_ astronomy

i) Different shapes of the moon as seen over the month \_\_\_ phases of the moon

j) The galaxy in which our solar system is located \_\_\_\_\_ Milky Way

(10 marks)

2. a) **Draw** and **label** how a Spring tide occurs in the space below:

Diagram showing the moon and Sun pulling on the Earth in the same direction

See p.337 SB for clarification

Labelled sun, moon, earth in correct positions 3 marks

Diagram showing large bulge towards the sun/moon 1 mark

Labelled high tide and low tide 1 mark

(5 marks)

b) **Describe** how a solar eclipse occurs \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Moon gets between Sun and Earth (1) Moon blocks sunlight (1) Shadow hits the Earth, only small (1) Umbra and penumbra mentioned (1)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(4 marks)

3. a) **State** how many high tides Perth experiences in a day \_\_\_\_ 2

1. **Name** one natural satellite of the Sun \_\_\_\_\_\_ planet, comet

1. **Name** a constellation that can only be seen in the Southern Hemisphere \_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Southern Cross

(3 marks)

4. **Justify** the following statement:

1. Lunar eclipse and phases of the moon are different things \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Yes. Lunar eclipse lasts hours, phases of the moon 29 days, lunar eclipse is because the sun is blocked by us, phases of the moon is the position of the moon relative to us.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ any two correct answers

(2 marks)

5. **Explain** why seasons occur: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

the Earth is tilted on its axis and as it orbits the sun at certain time the Southern hemisphere is closer to the Sun than the Northern hemisphere.

(2 marks)

6. **Classify** the following as planet, dwarf planet or zodiac:

1. Pluto \_\_\_\_\_\_\_\_\_\_ Dwarf planet
2. Mars \_\_\_\_\_\_\_\_\_ Planet
3. Pisces \_\_\_\_\_\_\_\_\_ Zodiac
4. Venus \_\_\_\_\_\_\_\_\_ Planet

(4 marks)

7. **Identify** the following: (a day, a year, summer, winter)

1. A rotation of the Earth \_\_\_\_\_\_\_\_\_\_\_\_\_ day
2. A revolution of the Earth \_\_\_\_\_\_\_\_\_\_\_ year
3. When Australia is tilted towards the Sun \_\_\_\_ summer
4. When Australia is tilted away from the Sun \_\_\_\_\_ winter

(4 marks)

8. Does the angle that sunlight hits the Earth affect the temperature?

**Design** an experiment that could be used to answer this question.

1. Aim \_\_ To see if the angle that light hits a surface affects the temperature
2. Independent variable \_\_\_\_\_ Angle of the light
3. Dependent variable \_\_\_\_\_\_\_ Temperature
4. Controlled variables \_\_\_ Same light, same place, same type of thermometer any reasonable
5. Equipment \_\_ thermometers, lights, sticky tape, boards, books to prop up.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Method \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Any reasonable method written in the correct tense. See p353 SB

(10 marks)

9. The table below shows different planets and the moon and their gravity compared to Earth.

If your average jump height on Earth is 46cm **calculate** your predicted height jump on each planet and the moon.

**Your average jump height ÷ gravity**

|  |  |  |
| --- | --- | --- |
| **Planet or Moon** | **Gravity compared to Earth’s** | **Predicted Height Jump (cm)** |
| Earth | 1 | 46 |
| Moon | 0.16 | 287 |
| Mercury | 0.38 | 121.05 |
| Venus | 0.91 | 50.5 |
| Mars | 0.38 | 121.05 |
| Jupiter | 2.36 | 19.49 |
| Saturn | 0.92 | 50 |
| Uranus | 0.89 | 51.68 |
| Neptune | 1.1 | 41.8 |

a) Graph the predicted height jump above as a column graph. (5 marks)

Correct calculations (1) Title (1), axis scale and labels (2) plotted correctly (1)

b) Which **two** planets have the lowest jump height? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_ Jupiter and Neptune

(2 mark)

c) Which **two** places have the highest jump height? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_ Moon and Mercury or Mars

(2 mark)

d) **Compare** the moon and Jupiter \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Moon 287 Jupiter 19.49 Moon is much higher than Jupiter, Jupiter is much less than Moon.

Numerical (1) Qualitative (1)

(2 marks)

f) **Explain** why your predicted jump height is so low on Jupiter

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Gravity is much stronger than Earth and that attracts you back to the surface of the planet.

Or similar.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(2 mark)

10. **Estimate** the time of the next tide and whether it is low or high:

1. low tide 10.30am \_\_\_\_ High at 4.30pm
2. high tide 2.20pm \_\_\_\_\_ Low at 8.20pm
3. high tide 12.04 am \_\_\_\_ Low at 6.04am
4. low tide 9.27pm \_\_\_\_\_\_\_ High at 3.27am

(4 marks)

11. **Define** the following:

i) satellite \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

A mass in orbit around another object

ii) zodiac \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The star signs

iii) new moon \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

A phase of the moon when nothing is visible

iv) season \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

A three month period of the year caused by the tilt of the Earth

v) astrology \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The belief that the position of the stars and planets can affect events in a persons life

(5 marks)