


HOMEWORK BOOKLET
 Space



Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Form: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

Subject Teacher: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date Given: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date to Hand in:\_\_\_\_\_\_\_\_\_\_\_

APP: AF1 Thinking Scientifically

Dispatches

Target Level:

Level Achieved:

Parent / Guardian Comment:

**WWW**:

**Next steps**:

**Guidelines**

Within this booklet there are a series of tasks. It is recommended that you spend between 3.5 and 4 hours to complete this task. You will be given a week to complete all tasks. Parents/Guardians are encouraged to support their children in the completion of this booklet.

Marks will be awarded for:

* High quality presentation of work
* Correct spelling, punctuation and grammar
* Use of key terms

**Extra Help**

Consider doing the following to help you find information to complete the tasks.

* Useful Website: http://www.bbc.co.uk/bitesize/science
* Use a search engine e.g. google.com or bing.com
* Use key words in your google searches e.g. ‘gravity’. Even better if you add ‘bitesize gravity’ which normally finds the exact page on bitesize which Is easily understandable with examples.
* Use ask.com to find a fact out.
* Avoid Wikipedia.

**Levelled tasks**

**Tasks**

The following sections will increase in difficulty, try to answer all sections.

Dispatches will be awarded for each section completed correctly and for excellent presentation. You will need to research the answers using the internet.

The following sections are levelled from Level 4 to Level 7. Even if your target is lower than a 7 you should still attempt all sections (use the guidance to he



 Space

HINT – Search these facts using the internet

 1. What is the order of the planets, starting from the Sun?

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

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

 2. Which planet is the biggest?

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

 3. Which planet is the smallest? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 4. What keeps us from floating off into the sky and keeps the planets in

 orbit around the sun?

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

 5. What scientist first discovered this force?

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

 6. What is the name of the comet that orbits the sun once every 76 years?

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

 7. What is a satellite?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Complete the following sentences using all or some of the words below;

**Mass, weight, kilograms, Newtons, Newmans, Hina, Kenny, Force, upthrust**

\_\_\_\_\_\_\_\_\_\_\_\_ measures how much material an object is made of. It is measured in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Weight measures the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of gravity on an object. Because weight is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ it is measured in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. \_\_\_\_\_\_\_\_\_\_\_ is the best science teacher in the world.

1. Can you explain why your **weight** would be less on the moon (compared to the earth)?

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

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

1. Can you explain why your **mass** would be the same on earth and

 the moon?

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

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

1. On the picture of the earth below, can you draw what would happen if he lets go of the ball?



What do **you** think?

**TIP** – Use google to find out if they are true or false (and why)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Idea | Agree | Disagree | I'm not sure | Because… |
| We have ‘Summer in England’ when the Earth gets closer to the Sun. |  | http://www.clker.com/cliparts/e/3/9/7/1245686792938124914raemi_Check_mark.svg.thumb.png |  | The earth is on a tilted on its axis. When the Northern Hemisphere is angled at the sun we have summer. |
| The Earth orbits around the Sun, and the Moon orbits around the Earth. |  |  |  |  |
| We can see the Sun, stars and the Moon because they all give out light. |  |  |  |  |
| The Earth is one of eight planets that orbit around the Sun. This is called the Solar System. |  |  |  |  |
| The Sun is not a star because it’s much bigger than a star. |  |  |  |  |
| The tides of the sea are caused because the moon’s gravity pulls the water. |  |  |  |  |
| The Earth takes 365 ¼ days to go around the Sun once. |  |  |  |  |



Write a scientific **reason** for your opinion here…

For each idea, put a **tick** in one of these boxes

 Intergalactic Tours

You will need to use:

w = m x g

m = w / g

g = w / m

G = Gravitational Strength

M = Mass

W = Weight



**Example**

What is the Gravitational Strength of Earth if a man weighs 750 N and a mass of 75kg? Gravitational Strength = Weight/Mass

 = 750N/75kg = 10N/kg Answer = 10N/kg

Sprog the alien is going on an intergalactic holiday. He has packed his suitcase and made sure that he has not gone over the Planet Zog weight limit of 800N.

At home, on Planet Zog, Sprog ***weighs*** 700 N. His ***mass*** is 35kg.

1. What is the ***gravitational strength*** of Planet Zog? (Show your workings out)

 Answer = \_\_\_\_\_\_\_\_\_ N/kg

At home, on Planet Zog, Sprog’s suitcase ***weighs*** 300 N.

2. What is the ***total mass*** of Sprog and his suitcase? (Show your workings out)

 Answer =\_\_\_\_\_\_\_\_\_\_kg

Sprog has decided to visit 7 different planets from different galaxies. He also wants to bring home a 3kg souvenir from every planet to show his mum.

3. What is the ***total mass*** of ***Sprog***, his ***suitcase*** and all his ***souvenirs*** from his intergalactic tour? (Show your workings out)

 Answer = \_\_\_\_\_\_\_\_\_\_kg

Sprog needs to work out which planet he can fly home from! They all have different ***weight limits*** and if Sprog and his suitcase are too heavy, he won’t be allowed on the journey!

4. For each planet, what is the ***total weight*** of Sprog, his suitcase and all his souvenirs (use your ***mass*** answer from Q3 to work this out)? Fill in the missing column in the table.

|  |  |  |  |
| --- | --- | --- | --- |
| Planet | Gravitational strength of the planet (N/kg) | ***Total weight*** of Sprog, his suitcase and all his souvenirs (N) | Intergalactic tours weight limit (N) |
| Zagzig | 12 |  | 650 |
| Xenod | 1.5 |  | 60 |
| Bozag | 7 |  | 500 |
| Staz | 1 |  | 60 |
| Ploiki | 4 |  | 250 |
| Leopa | 20 |  | 1450 |
| Cquida | 50 |  | 3000 |

5. To get home, Sprog’s ***total weight*** must be less than the Intergalactic Tours weight limit for that planet. Which planets is he allowed to fly home from?

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

Space

**Across**

5. A planet completes one of these every day

8. Vehicle to transport people into space

12. Our planet

16. This is found in between Mars and Jupiter

17. The first animal in space was one of these

18. This star gives us light

20. This was left on the moon

21. The time it takes for a planet to complete an orbit

22. The group of planets and star that Earth is part of

**Down**

1. A natural satellite

2. Some planets are made of rock and some are made of ...

3. One of the gases that is found in the Sun

4. The path of a planet around a star

6. The number of planets that have been discovered in our Solar System

7. The hottest planet in the Solar System

9. No longer a planet

10. The nationality of the first man in space

11. Largest planet in the Solar System

13. Neil ....... The first man to walk on the moon

14. This force is very attractive

15. Planet closest to the Sun

19. The red planet