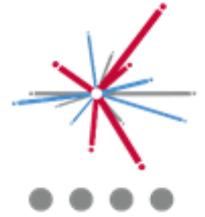


# Ark Pioneer learning at Home Core Curriculum Science *with Additional Support*



## Work to be completed

- Day 1- Healthy diets
- Day 2- Energy requirement analysis
- Day 3- Nutrients questions
- Day 4- Exercise

## Resources / links to help with work:

<https://www.arksportsdaychallenge.com/>

## How will this work be checked?

Each week you will be given 'red pen work' to carry out corrections on the learning that you are doing at home. Please make sure this work is done and that you correct all work in your exercise book.

You must also complete the weekly quiz for your core curriculum subjects online and the link to those is on our school website in the 'quizzes' drop-down option from 'Home Learning'.

## How much time should I be studying and what happens if I don't finish all my work?

For core curriculum subjects you are expected to do 30min each day as a minimum. Those subjects are English language, English literature, Maths, Science, History and Geography. These subjects all have a weekly quiz and will be checked in on by your form teacher when they call each week.

All other subjects are 'Extended Curriculum' and they should be done after you have finished the Core Curriculum tasks for the day. You should plan to do work in different subjects each day. We recommend that pupils do one hour per week in each of the 'extended curriculum' subjects.

We recognise that it is not possible for all pupils to complete all work given the exceptional circumstance. Please speak with your form tutor about the work if it is becoming unmanageable.



*Aim high*



*Have integrity*



*Be kind*



*Model determination*

This week's science booklet focuses on living a healthy lifestyle and the importance of a healthy diet and regular exercise on the body.

<b>Nutrients</b>	Important substances that your body needs to survive and stay healthy. It is important that you eat a balanced diet with the correct proportion of each nutrient.	
<b>Carbohydrates</b>	The nutrient that is used as the body's store of energy. Foods rich in carbohydrates are: bread, pasta, rice, potatoes etc. Carbohydrates are also found in sugar and anything that contains sugar	
<b>Proteins</b>	The nutrient that is used for growth and repair of the body. Foods rich in protein are meat, fish, dairy, eggs, beans, lentils etc.	
<b>Lipids (fats and oil)</b>	This nutrient is essential for a healthy nervous system and is also a source of energy for the body. Foods rich in lipids are butter, fatty meat, nuts, oily fish, avocado, oils.	
<b>Vitamins and minerals</b>	Essential nutrients needed by the body in very small amounts to keep it healthy. Example: Vitamin C which is found in citrus fruits, calcium is found in dairy products.	
<b>Fibre</b>	Provides bulk to food to keep it moving through the gut, not a nutrient but important in a healthy diet.	
<b>Deficiency</b>	When a person does not eat enough of a certain nutrient which can lead to specific diseases, for example a Vitamin D deficiency can lead to a disease called Rickets.	

# Eatwell Guide

Use the Eatwell Guide to help you get a balance of healthier and more sustainable food. It shows how much of what you eat overall should come from each food group.

Check the label on packaged foods

Each serving (150g) contains

Energy	3.0g	1.3g	3.4g	0.9g
Carbohydrate	LOW	LOW	MED	HIGH
Fat	4%	7%	38%	15%
Sugar				
Salt				

Typical values (per 100g) per 100g: 687kJ/167kcal

Choose foods lower in fat, salt and sugars



Water, lower fat milk, sugar-free drinks including tea and coffee all count.  
Limit fruit juice and/or smoothies to a total of 150ml a day.



Eat less often and in small amounts

Per day 2000kcal 2500kcal = ALL FOOD + ALL DRINKS

# Day One

Answer the following questions in your workbook in full sentences.

1. Write down everything you ate for each meal yesterday.

*I ate.... for my breakfast / lunch / dinner yesterday*

2. Identify the nutrients present in each meal that you ate.

*Use the table below to support you*

Example:

## **Breakfast**

Cornflakes (**carbohydrates**)

Semi skimmed milk (**Protein and a small amount of lipid**)

Glass of orange juice (**Vitamins and carbohydrates**)



## **Lunch**

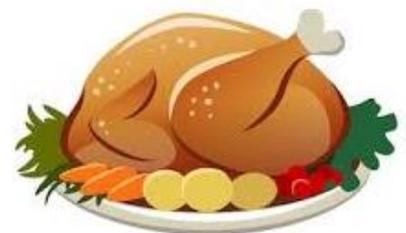
Ham and cheese sandwich (**ham and cheese - protein and lipids, bread - carbohydrates, butter- lipids**)

Bag of crisps (**Carbohydrates and lipids**)

Apple (**Carbohydrates and vitamins**)

Water

Meal / Food	Nutrient
<b>Breakfast</b>	-
<b>Lunch</b>	-
<b>Dinner</b>	-

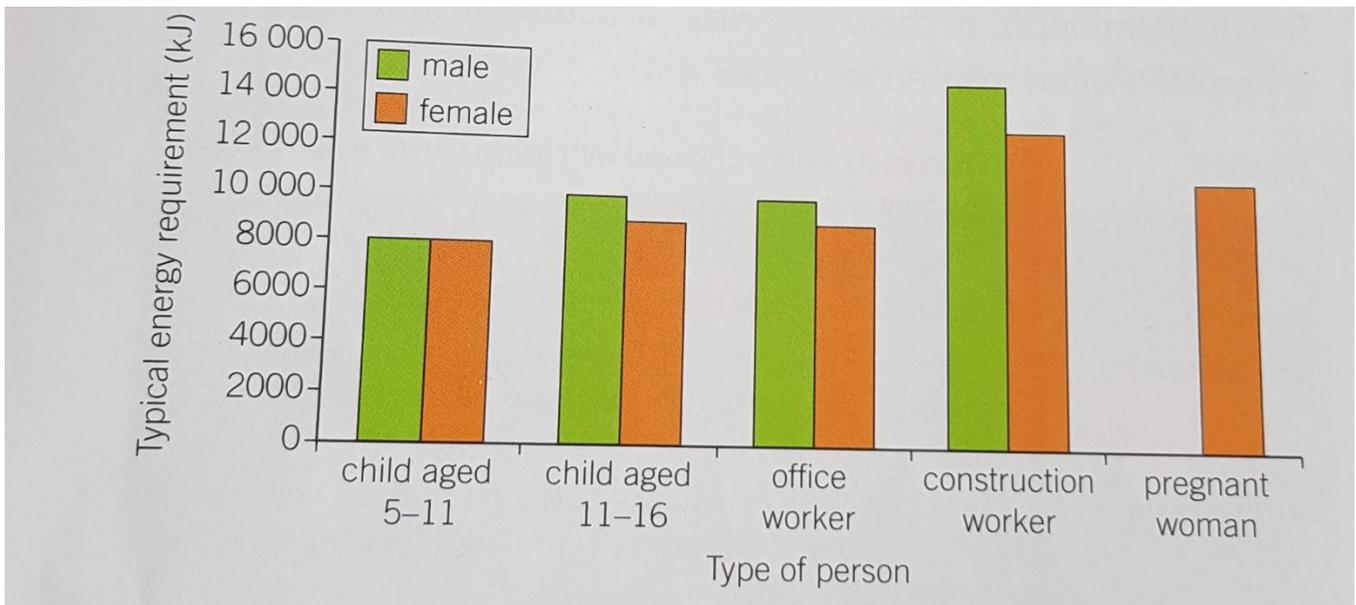


## Day Two

Your body needs the correct amount of energy each day to function properly.

The amount of energy you need from food varies depending on your size (height and weight), sex, age and the amount of movement you do each day.

Below is a bar graph showing the daily energy requirements for different people:



Use the bar graph to answer the following questions:

1. What type of person requires the most daily energy? Why do you think that is?

\_\_\_\_\_ require the most daily energy. This is because...

2. Why do you think a child needs less energy daily than an adult?

*I think children need less energy daily than adults because...*

3. Approximately how much energy does a pregnant woman need each day? Why do you think that is?

*Pregnant women require approximately \_\_\_\_\_ KJ of energy a day. I think this is because...*

4. How much more energy does a female need when she is 12 years old compared to when she is 8?

*A female needs \_\_\_\_\_ KJ more energy when she is 12 years old compared to when she is 8.*

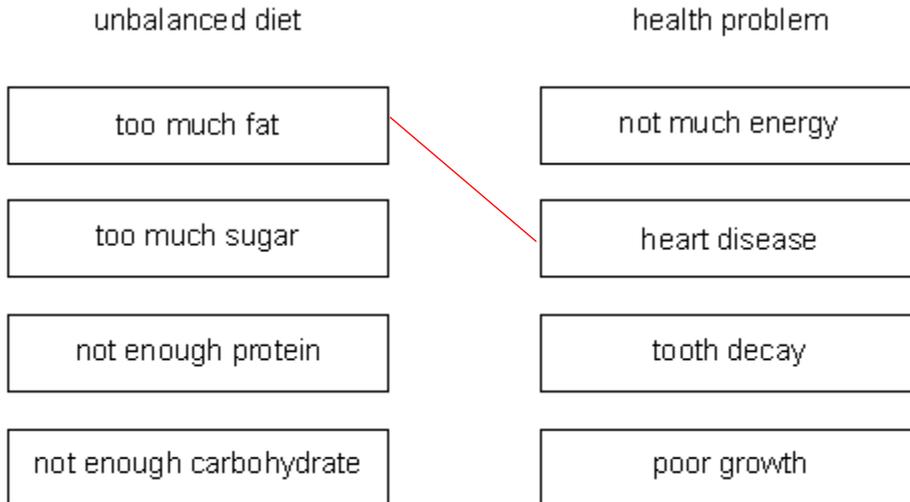


# Day Three

Answer the following questions in your workbook in full sentences.

**Q1.** Some people have unbalanced diets. This can give them problems with their health.

(a) Draw **one** line from each unbalanced diet to the health problem it can cause. **The first has been done for you:**



4 marks

(b) Explain why eating a lot of chips every day is bad for your health.

.....

[Hint: Although delicious, what do chips contain? What could happen to you eat too much?]

**Q2.** The following are important parts of a balanced diet.

A pupil has a sweet, juicy orange to eat.

(a) Complete the following sentences using words from the list above. **The first has been done for you:**

- carbohydrates**
- proteins**
- fats**
- vitamins**
- water**

(i) An orange is a good source of **water** ..... and .....

(ii) An orange is a poor source of ..... and .....

(b) Give the names of **two** parts of a balanced diet which are **not** shown in the list above. **Pick from this list to help you >**

1. ....

2. ....

- minerals**
- seeds**
- fibre**
- salt**

**Q3.** The information below shows the recommended daily amounts of nutrients and energy for four different people.

person	protein	calcium	iron	energy
15-year-old girl	45 g	800 mg	15 mg	8 830 kJ
15-year-old boy	55 g	1000 mg	11 mg	11 510 kJ
computer operator	56 g	700 mg	9 mg	10 700 kJ
bricklayer	56 g	700 mg	9 mg	13 000 kJ

*Information taken from Report 41 of the Department of Health - Dietary Reference Values for Food Energy and Nutrients for the United Kingdom 1991.*

(a) Explain why the 15-year-olds need more calcium than the adults.

.....

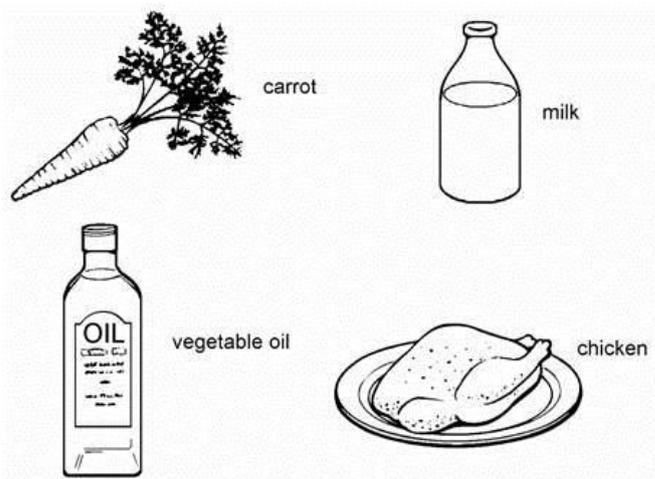
.....

.....

[Hint: consider what calcium is needed for! What is happening to 15-year-olds and not adults?]

(b) A balanced diet contains a variety of foods which provide nutrients and energy.

The drawings show four different foods. Choose from these to answer the questions which follow. **The first has been done for you:**



Which of these foods is the best source of,

fibre? **carrot** .....

calcium? .....

protein? .....

## **Day Four**

Exercise is **extremely important** to living a healthy lifestyle.

Even if you eat a balanced diet without exercising regularly your body will not be in its best possible condition.

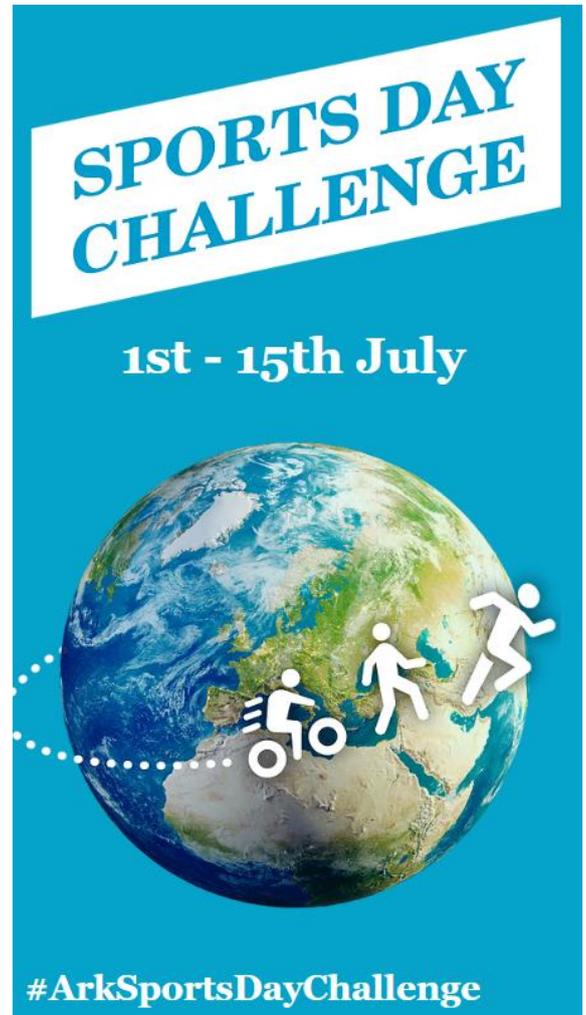
Exercise can help you lungs and heart function better, improve your fitness- strength and endurance and exercise can help boost your mood.

For that reason **use your half an hour of science work time today to do 30 minutes of exercise.**

This could be walking, running, cycling, dancing or anything else you can think of.

If you go on a walk, run or cycle make sure to record the distance that you do on the Ark sports day challenge website so the distance can count for your tutor group.

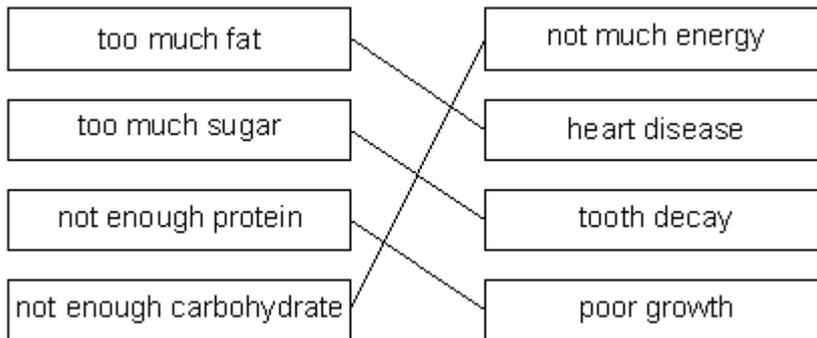
<https://www.arksportsdaychallenge.com/>



# Mark Schemes

## Day Three

**Q1.**(a)



*if more than four lines are drawn deduct one mark for each incorrectly drawn line  
minimum mark zero*

4 (L3)

(b) they contain too much fat

*accept 'they contain fat' or 'they make you fat or overweight'  
accept 'it is an unbalanced diet' or 'it could give you a heart attack' or it causes heart disease'*

1 (L3)

[5]

**Q2.**

(a) (i) **Answers may be in either order**

vitamins

*accept 'vitamin C'*

1

water

*accept 'carbohydrates'*

*do not accept 'sugar' or 'starch'*

1

(ii) **Answers may be in either order**

fats

1

proteins

1

(b) **Answers may be in either order**

minerals

1

fibre

*accept 'roughage'*

1

[6]

**Q3.**

(a) **answers should refer to bones and their growth**

calcium is needed for bone

*accept 'it is needed for teeth'*

**1 (L5)**

the 15-year olds are still growing

*accept 'the adults have stopped growing'*

**1 (L5)**

(b) carrot

**1 (L5)**

milk

**1 (L5)**

chicken

**1 (L5)**