

GCSE Environmental and Land-Based Science

How Heavy?

Instructions and answers for teachers

These instructions should accompany the OCR resource 'How Heavy?' activity which supports OCR GCSE Environmental and Land-Based Science.

GCSE Environmental and Land-Based Science
Lesson Element

GCSE Environmental and Land-Based Science

How Heavy?

Investigate the weight and health of animals

In this activity you will find the mass of a small animal. You will need to know, before you start, the correct way to pick up the animal you have chosen to weigh.

Before weighing the animal make sure that you have planned carefully what you will need to do, you have all the equipment you will need, and that you are wearing the correct protective clothing. If you are working with another student make sure you both know who is doing what.

The method given below uses a soft bag as the container. However, you may need to use another container such as a bucket depending on the size of the animal you are weighing.

Method

1. Calibrate the balance using the masses provided. Once you have checked that the balance is accurate you will need to think about how you take into account the mass of the container in which you are placing your animal.
2. You can practise your method using the known mass before you try to weigh the live animal.
3. Construct a record sheet ready for your results. If you have more than one animal to weigh you will need to have a way of identifying which animal is which on your results sheet.
4. Using the correct technique carefully pick up your chosen animal and place it into the bag, closing the draw string at the top of the bag. It is better to put the bag over the animal rather than to drop or push the animal into the bag.
5. Hang the bag and animal on the spring balance.
6. Make a note of the mass of the animal on your record sheet. Carefully return the animal to its pen.

OCR
Oxford Cambridge and RSA

The Activity:



This activity offers an opportunity for English skills development.

Associated materials:

'How Heavy?' Lesson Element learner activity sheet.

Investigate the weight and health of animals

Introduction

The aims of this activity are to support the teaching of several learning objectives of the:

- B682 unit, Topic 2: Small Animal Care, including how to handle, transport and weigh small animals correctly (objective 11) and the routine health checks that are used when keeping a named small animal (objective 10).

and

- B683 unit, Topic 2: Livestock Husbandry, including how to approach, move, transport and weigh farm livestock safely (objective 14) and recognise the signs of a healthy and unhealthy animal (objective 2).

In addition, this activity can be used as a training activity to prepare students for subsequent assessment of Element 1: Practical Skills and could potentially be developed into a possible Element 2: Scientific Investigation involving the growth rate of animals.

The activity involves students considering the best method to use to weigh an animal, how to record the results and how these results could be used in monitoring the health of the animal. Centres will need to ensure they have the correct equipment if farm livestock are used for this task.

An opening topic for discussion with students could be why it is important to monitor the mass of an animal, hence emphasising the need to carry out routine health checks and for commercial animals reaching the correct weight for sale. This would then lead into student discussions concerning the correct way to handle the particular animal and issues of health and safety both for the animal and the handler.

The methods employed by the students will vary slightly depending on the type of small animal to be weighed and the equipment available. This can be discussed as a class exercise prior to carrying out the activity. For most small animals the best technique is to place the animal carefully into a bucket or soft bag which is suspended from a spring balance. An alternative for larger animals, such as large poultry or piglets, would be to weigh the student who then holds the animal and is reweighed subtracting the two masses to find the mass of the animal.

A good introduction to the basic principles of weighing animals can be found in the short video on weighing pigs on the elbs.info website, shown below, under B683 / Livestock Husbandry / LO14 / weighing pigs.

<http://www.elbs.info/index.php/b683>

Apparatus (per group or individual)

- spring balance or bathroom scales, preferably digital
- known masses for calibration
- container to hold the animal – a lid may be required; soft bag with draw-string top
- clipboard, paper and pen/pencil
- protective clothing and gloves as appropriate
- suitable animal to be weighed

The student guide that accompanies this task is based on weighing a small animal, such as a rabbit, by placing it into a soft bag. This can be adapted to suit the individual school's needs, however.

Safety

Normal laboratory safety should be maintained.

Students must be reminded to wash their hands after doing the task.

Extension activities

Students could use this activity as a basis for an investigation of the growth of an animal over time.

Change in mass could be compared with change in height/length. It would also be possible to compare the growth of individual animals in a particular litter.

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Once you have tidied away all your equipment and washed your hands, answer the following questions.

1. How did you make sure the mass of the bag did not affect your results?

2. Suggest **one** possible risk to you when carrying out this investigation.

3. How could you reduce this risk?

4. Suggest **one** possible risk to your animal while carrying out this investigation?

5. How could you reduce this risk?

6. If you collected data for the changes in mass of your animal over a period of time, construct a graph on the graph paper provided to display the data you have collected.

7. Suggest a possible reason why keepers of animals might want to regularly weigh their animals.

8. If you were to repeat this activity, suggest some improvements that you would make to the method.



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