

Science - Year 3

Animals incl. Humans – Block 3AH

Keeping Healthy

Session 5

Resource Pack

Client's name _____ Researchers' names _____

Do people who exercise a lot, have a larger lung capacity than people who don't?

Our prediction is ...

We think this because ...

To investigate this question we will compare

Either use this table to collect your data, or draw your own on the back of this sheet

Title:

We think our data shows that ...

We will display our data in a chart

We think our prediction was ...

Client's name _____ Researchers' names _____

Do people who exercise a lot, pant less after strenuous activity than those who don't?

Our prediction is ...

We think this because ...

To investigate this question we will compare

Either use this table to collect your data, or draw your own on the back of this sheet

Title:

We think our data shows that ...

We will display our data in a chart

We think our prediction was ...

Client's name _____ Researchers' names _____

Do people who exercise a lot, have better balance?

Our prediction is ...

We think this because ...

To investigate this question we will compare

Either use this table to collect your data, or draw your own on the back of this sheet

Title:

We think our data shows that ...

We will display our data in a chart

We think our prediction was ...

Client's name _____ Researchers' names _____

Do people who practice activities that need good balance, have better balance than those who do not?

Our prediction is ...

We think this because ...

To investigate this question we will compare

Either use this table to collect your data, or draw your own on the back of this sheet

Title:

We think our data shows that ...

We will display our data in a chart

We think our prediction was ...

Task Support Sheet 1

Do People who exercise a lot have better balance?

If we want to investigate this question what will we need to do?

- Think of a way to measure how good people's balance is
- Compare the balance of people who do lots of exercise with people who don't

How can we measure balance?

Here are a few ideas.

		
<p>Pick a balance pose and ask people to hold it for as long as they can. Time how long they manage to hold the pose.</p>	<p>Make a balancing course and measure how far people can travel along it.</p>	<p>You could put a zigzag line of masking tape on the ground and see how far people can balance along it.</p>

Once you have decided how to measure balance, you need to decide who to ask to do your investigation. You could ask 2 or 3 people who do a lot of exercise each week and the same number of people who do not.

What do you think will happen?

Why?

Write your prediction on your task sheet and your reason for it.

It's time to start investigating!

Task Support Sheet 2

Do People who practise activities that need good balance (like dance and gymnastics) have better balance than people who do not?

If we want to investigate this question what will we need to do?

- Think of a way to measure how good people's balance is
- Compare the balance of people who do dance or gymnastics with people who don't

How can we measure balance?

Here are a few ideas.

		
<p>Pick a balance pose and ask people to hold it for as long as they can. Time how long they manage to hold the pose.</p>	<p>Make a balancing course and measure how far people can travel along it.</p>	<p>You could put a zigzag line of masking tape on the ground and see how far people can balance along it.</p>

Once you have decided how to measure balance, you need to decide who to ask to do your investigation. You could ask 2 or 3 people who do dance and gymnastics each week and the same number of people who do not.

What do you think will happen?

Why?

Write your prediction on your task sheet and your reason for it.

It's time to start investigating!

Task Support Sheet 3

Do people who exercise a lot, pant less after strenuous activity than people who do not?

If we want to investigate this question what will we need to do?

- Think of a way to get people to do some strenuous activity
- Count how much they pant afterwards (perhaps the number of breaths in the first minute after they stop) for people who do a lot of exercise each week and people who don't

How can we get people to do strenuous activity?

Here are a few ideas.

		
5 minutes running	30 big star jumps	3 minutes skipping

Once you have decided on your exercise, you need to decide who to ask to do your investigation. You could ask 2 or 3 people who exercise a lot each week and the same number of people who do not.

What do you think will happen?

Why?

Write your prediction on your task sheet and your reason for it.

It's time to start investigating!

Session 5 Teachers' Notes

This session will involve all the groups undertaking to plan and carry out a practical science investigation that will help them to answer a remaining client health question. If the suggested client profiles have been used there will be three different investigations.

- Two groups will investigate a possible link between exercise and lung capacity by trying to answer the question: ***Do people who exercise a lot have a larger lung capacity than people who don't?***
- Two groups will investigate a possible link between exercise and balance by trying to answer the question: ***Do people who exercise a lot have better balance than people who do not? Or: Do people who practise activities that need good balance (like dance and gymnastics) have better balance than people who don't?***
- Two groups will investigate a possible link between exercise and panting (respiration rate after exercise) by trying to answer the question: ***Do people who exercise a lot pant less after strenuous activity than people who don't?***

Managing the Session

Sensitivity

Teachers should bear in mind that for some pupils the issues surrounding health and exercise may be sensitive. Try to promote a positive attitude to exercise and participation in sport without any element of judgement or negativity towards pupils who do little exercise beyond class P.E. sessions. It may be helpful to suggest that everyone gets plenty of healthy exercise by running about and being active at playtimes and in P.E. so our investigations are comparing averagely active people with super sporty people. Many children will be happy to volunteer to be involved in other group's investigations so perhaps a list of volunteers could be drawn up at the start so no one feels under pressure to take part.

Discussions around the issue of sensitivity could draw attention to some of the following:

- Some children may not go to organised sport sessions but get plenty of exercise in other ways, e.g. walking to school or walking their dog or playing in the park and these are just as important
- We need other people's help to do our investigations. We are all different and have different interests and talents. We can learn a lot from one another and about science by using our differences and everyone who takes part is equally important to the investigation
- Not everyone is able to go to extra sport or coaching sessions even when they want to because of other things, e.g. time, transport, brothers and sisters doing other things, costs, clashes with other activities they already do.
- We will only use people who are happy to volunteer to take part and will not put anyone under pressure
- We always treat one another with kindness and respect

Investigating in Groups

Assessment of skills

Giving pupils the opportunity to plan and carry out practical investigations is a necessary part of **Working Scientifically** which is an integral part of the National Curriculum. Groups may choose to carry out their investigation in different ways and decisions on what to measure, who to test and how to test it will lead to scientific discussion. If adults are able to observe this process it will be a rich source of assessment of pupils' skills in **Working Scientifically**. A Group Assessment sheet is provided in the Session 5 resources to help teachers focus on the relevant skills. The skills are divided into 3 groups – Planning, Doing and Reviewing. Each group will have a task sheet that will prompt them in the planning, doing and reviewing of the investigation.

Planning

Each group will hopefully propose to compare two groups of people according to the question they are answering (a group of volunteers who do a lot of physical activity per week and a group of volunteers who do not). Some groups may plan to test a large number but it is unlikely that time will allow so it may be necessary to tactfully suggest that they begin with volunteers they predict would be most likely to show a difference (if there is one). The task sheet will prompt children to make a prediction and give their reasoning for this. Groups that struggle to plan a viable investigation can be given a support sheet (see Session 5 resources) which should help to scaffold their thinking.

Doing

As each group begins their investigation it is likely that the classroom will be buzzing with activity: 2 groups testing balance, 2 groups generating intense physical activity and recording the resulting respiration rates and 2 measuring lung capacity. It would be beneficial to have additional adults during this session if possible to help with assessment and supervision. Try to anticipate equipment needs before the session by providing access to stop watches, clipboards, marker cones, spot markers, P.E. mats, balancing beams etc. You may wish to consider booking or negotiating time in the hall or gym. Encourage groups to think about how they can share out the work within the group so that everyone has a role to play and time is used wisely.

Reviewing

Pupils may need to be reminded that it is not always easy to spot patterns in data and they should be encouraged to display their data in the form of a graph or chart. The task sheet should prompt this. Bar charts and scattergrams have been taught specifically during this block so it is likely that pupils will choose one of these as a means to display their data. Any graphs or charts they produce to illustrate their findings can be used in their presentation to their clients next session. Make graph paper available for this. Groups should use their data and charts to discuss whether their prediction was correct or not and why.

Health and Safety

- Disinfectant wipes should be used to cleanse the plastic tubing after each use on the lung capacity measurer to prevent cross infection.
- Groups working on balance and physical activity should remind their participants of the importance of warming up the muscles through gentle stretching before beginning the task.