



EduTrend Contents

EDUTECH · SCIENCE · PRIMARY

Fair Test Detectives

Which ball bounces highest? Plan and run a fair test

Ages 8–11

Level: Developing

60 minutes

Groups of 3–4 · up to 30

Activity 02

Inside: activity at a glance · step-by-step session plan · facilitator notes · 3 pupil worksheets · assessment checklist

ACTIVITY 02 · AT A GLANCE

Fair Test Detectives

Pupils predict which of four balls will bounce highest when dropped. As a class they agree what to change (the ball), what to measure (bounce height) and what to keep the same (drop height, floor, how it is dropped). Groups test each ball three times, record results in a table and compare.

Learning outcomes

By the end of the session pupils can:

- identify variables;
- plan a fair test;
- take repeat readings;
- draw a conclusion from results.

KEY WORDS

fair test · variable · change ·
measure · keep the same · repeat ·
result

CURRICULUM LINKS

Maths: measuring, averages.
English: explaining. PE: ball
properties.

1**OBSERVE**

Look closely

2**QUESTION**

What do we want
to know?

3**PREDICT**

What do we think?

4**TEST**

Fair and repeated

5**ANALYSE**

What does the
evidence show?

6**SHARE**

Explain and discuss

Materials (per group)

- 4 different balls
- Metre stick taped to a wall
- Worksheets 1, 2 and 3

Before the session

- Tape metre sticks to walls.
- Choose a hard floor.
- Collect four ball types per group.
- Print worksheets.

SAFETY

Drop balls only from the agreed height. Keep
walkways clear and stand back from the drop
zone.

ACTIVITY 02 · SESSION PLAN

Step by step

A partner at eye level with the bounce top gives more accurate readings.

Time	What happens	Say or ask
0–8 min Predict	Show the balls and predict.	<i>“Why do you think so?”</i>
8–20 min Plan	Agree the variables.	<i>“What must stay the same?”</i>
20–42 min Test	Three drops per ball.	<i>“Are your readings close?”</i>
42–52 min Compare	Compare results across groups.	<i>“Why do groups differ?”</i>
52–60 min Conclude	Write a conclusion.	<i>“Was your prediction right?”</i>

CHALLENGE CARD (print or copy onto the board)

Plan and carry out a fair test on four balls, with three readings each, and write a conclusion using the evidence.

ACTIVITY 02 · FACILITATOR NOTES

The science know-how in brief

A fair test changes only one thing (the independent variable) and measures one outcome (the dependent variable), while keeping other things the same (control variables). This makes it possible to say what caused a difference.

Repeating readings shows whether results are reliable. If one reading is very different from the others, pupils can check what went wrong and repeat it.

Common ideas to listen for

- “One test is enough.” Repeats show reliability.
- “Bigger balls bounce higher.” Material matters more than size.
- “A different result means we failed.” It is evidence to discuss.

Adapting the activity

Support

Give a partly completed planning frame.

Stretch

Test different drop heights for one ball.

WORKSHEET 1

Fair test plan

Name: _____

Class: _____ Date: _____

Plan your test.

Fair test plan

Part	Our plan
I will change	
I will measure	
I will keep the same	
My prediction	

WORKSHEET 2

Results table

Record three readings.

Results table

Ball	Test 1 (cm)	Test 2 (cm)	Test 3 (cm)
A			
B			
C			
D			

WORKSHEET 3

Conclusion

Use your results.

What we found and how we know

FOR THE TEACHER

Assessment checklist

Use during the session. One sheet covers up to eight pupils; copy as needed.

Pupil	Identifies variables	Measures carefully	Concludes from evidence

Suggested codes: W = working towards · E = expected · G = greater depth

ABOUT THIS ACTIVITY

Fair Test Detectives is a sample activity from the EduTrend Contents Edutech Science programme (primary, level: developing). Every activity in the programme follows the same format: a practical challenge, a clear session plan, facilitator notes and ready-to-print worksheets, so that teachers, club leaders and parents can run it without extra preparation.

Full 15-, 20- and 32-week programmes are available from EduStore at edutrend.org.

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