

Year 1 Maths Lesson Plan

Resource Checklist

Measuring and comparing length

Learning Objective & Outcomes

Learning Objective:

To find out what effect the changing length of a pBuzz has on its sound

Learning Outcomes:

I can create a simple bar graph from measurements of a pBuzz
I can compare the different pitches made at different lengths
I can explain how a change in length affects the pitch of the note

National Curriculum Coverage:

To measure, record and compare lengths
To record lengths in a simple bar graph

- PBuzzes
- Long 2-3cm wide strips of coloured paper - at least 90cm long (display border works well for this)
- Large sheet of paper to fit up to 7 strips of paper on, side by side. This needs x and y axes drawn on to line up the strips. (Large squared paper is available) - 1 per pair
- Glue stick, pencil, blob of sticky tack and scissors - 1 per pair
- Metre rulers for extension activity

Starter

Give each child a pBuzz and ask them to experiment with making low and high sounds. (Refer back to the guidance in the Introductory Mini-Unit if you're unsure how to do this.) If any children have real trouble making a sound out of the pBuzz, make sure that you direct some questions to them so that they can show their understanding in a different way.

Key Questions

- Who can play me a low/high note?
- How is the sound made in your pBuzz?
- What difference does it make when you extend the slide?

Main

Explain to the class that you are going to find out how long the pBuzz is when it makes the highest sound and how long it is when it makes the lowest sound.

Divide the class into pairs and give them the resources outlined above. They can use the sticky tack to stop the pBuzz from sliding out of position - make sure the slide stops on the line below the position number/letter.

Differentiation:

For children working at emerging level:

- Measure the closed pBuzz from top of mouthpiece to end of bell on a strip of paper, mark it with a pencil and cut the excess paper off. Write 'Closed' on the strip.
- Measure the extended pBuzz in the same way on another strip of paper, mark and cut it and write 6 or F on the strip. If they can, do the same with one other position, writing which position it is on the strip.
- They should then order the 2 or 3 strips from shortest to longest and glue them onto their large piece of paper, lining the end of the strips up with the x-axis (horizontal line.)

For children working at established level:

- Measure the pBuzz as above, and also in positions 1 and 3.
- Add other missing positions if time allows.
- Label the strips, order them and stick them onto the large sheet of paper.

For children working at exceeding level:

- Measure the pBuzz as other groups, but in all positions.
- Label the strips, order them and stick them onto the large sheet.
- If time permits, use a metre ruler to measure how long each strip is in cm and add this to the labelling.

Key Questions:

- How can you make sure you are measuring as accurately as possible? (Match the end of the strip to the end of the pBuzz and mark the end of the bell carefully with the pencil, etc.)
- Which pBuzz position will measure as the longest strip? (Position 6/F)
- Do you think that was the highest sound or the lowest sound? (Lowest, but don't confirm this until the plenary)

Plenary

Display the bar graphs that the children have created. We need a title to tell everyone what these are showing. What have you measured? What did we want to find out?

Ask one of the children to play the pBuzz with the slide fully retracted, and then fully extended. Ask the children to discuss with a partner which gave the lowest sound and which gave the highest sound, then share with the class. Ask the children to look at their graphs and tell you what measurements correspond to each of the different notes on the pBuzz. What have we found out? What should we call our graph? (e.g. How the length of a pBuzz changes as the sound gets lower.)

Key Questions:

- How long was the pBuzz when it made the lowest sound? (81cm/fully extended)
- How long was it when it made the highest sound? (55cm/closed)
- Which one is longer? 55cm or 81cm?
- If the pBuzz is shorter, the sound is...? (higher)
- If the pBuzz is longer, the sound is...? (lower)

Lengths: Closed=55cm; 1/C=57cm; 2/B = 59cm; 3/Bflat = 62cm; 4/A = 68cm; 5/G = 75cm; 6/F = 81cm

Assessment & Evaluation

What to look for

Children can recognise that the extension of the slide affects the pitch of the note
Children can measure the pBuzz accurately
Children can compare the length of the strips correctly

How will you know if the lesson has been successful?

Could all the children identify lower and higher notes?
Did they all know that the shorter the tube, the higher the note and vice versa?
Were all the children able to improve their measuring?
Could they all order their strips by length?

Notes for Next Time

This space is for you to reflect on the lesson and make any notes you need.

