Book 3A, Unit 1 *You and Me*

Lesson 2 *Growth and Change*

Science Objectives

By the end of this lesson, students will be able to:
- Identify that some measurements change as they grow.
- Make and record some measurements.
- Use information to estimate growth.

Language Objectives

In this lesson, students will have the opportunity to use:
- Words relating to their sense of sight: **grow**, **height**, **measure**
- The sentence structure: "(Bob) is (140) cm tall." to describe height.
- Additional language: **crawl**, **stand**, **walk**

Materials

Review Activity	**Activity 1 & 3**
– an image of a family, consisting of mother, father, brother and sister	*per group:* – a tape measure

Review Activity

Review body parts
- Point to your eyes and say: I have… Encourage students to complete your sentence with: Eyes. Write *eyes* on the board.
- Repeat the previous step for other body parts: *hair*, *nose*, *mouth*, *hand*, *leg*, *ear*, *tooth*, *neck*, *arm*, *foot*.

Review similarities and differences
- Put students into pairs. Display an image of a family and ask: How are they the same? How are they different? Give pairs five minutes to make a note of as many similarities and differences between the family members as possible.
- When five minutes is up, nominate a few pairs to share their answers.

Stimulus Activity

Open your books
- Open the SB at p6. Draw students' attention to the pictures and read the question: How do you change as you grow? Encourage students to share their ideas and to think back to Book 2A, Unit 1, Lesson 1 *How Do You Grow?*. They may mention changes in activities such as walking, talking and crying, or physical changes such as growing taller.
- Say: Today, we are going to find out about growth and change.

Key Words

- Open the SB at p2 and draw students' attention to the key words.
- Write the key words on the board: **grow**, **height**, **measure**
- Read or play the recording of the key words and ask students to repeat.
- Use pictures or gestures to help students understand their meanings.

Activity 1

Books closed!

- Nominate a few students who are different heights to come and stand in a line at the front of the classroom. Ask: Are they the same height? No, (they are not the same height). Write *height* on the board and model it for students to repeat.
- Tell the students to move so that they are standing in height order from tallest to shortest. Ask each student: What is your height? (students' own answers) It doesn't matter if students don't know their height – encourage them to guess.
- Ask: How can you measure your height? Encourage students to share their ideas. Write *measure* on the board and model it for students to repeat.

Open your books

Measuring height

- Open the SB at p6 and draw students' attention to the pictures. Ask: What is it? (It is) a thermometer/a clock/a tape measure.
- Tell students to vote for the instrument that they think measures height by raising their hands. Say: I can measure my height with a thermometer/a clock/a tape measure. When students have agreed that the correct answer is "tape measure", discuss the uses of the other instruments. Ask: What can you measure with a thermometer? (You can measure) the temperature (with a thermometer). What can you do with a clock? (students' own answers) Students may mention using a clock to tell the time, or time a race.
- Put students into groups and give each group a tape measure. Ask: How do you use a tape measure? Students may volunteer to demonstrate, otherwise nominate two students to show the others how to use a tape measure. Draw their attention to the features of a tape measure by asking questions such as: Can you see the numbers? How long is 1 cm?
- Tell students to use the tape measure to measure each other's height. They should record the results by writing them down.
- Ask groups to share some of their results. Write the results on the board and discuss them by asking questions such as: Who is the tallest/shortest in the class? What is the average height?

Estimating height

- Draw students' attention to the pictures in the second part of the activity. Ask: How tall is Peter? (Peter is) 120 cm. How tall are Lily and Kate? Tell students to complete the second part of the activity by circling the heights.
- Nominate a few students to share their answers and give reasons for their choices. They should have identified that Lily is taller than Peter (therefore must be 130 cm) and Kate is shorter than Peter (therefore must be 110 cm).

Activity 2

Books closed!

- Draw a simple bar chart on the board:
  - draw the x-axis and label it *Name*
  - draw the y-axis and label it *Height*
  - add 10 cm increments to the y-axis from 100 cm to 140 cm
  - add three names to the x-axis: *Kate*, *Lily*, *Peter*
  - add three bars to show their respective heights: Kate 110 cm, Lily 130 cm, Peter 120 cm
- Ask: How tall is Kate? Show students how to read the chart by running your finger along the x-axis to "Kate", then up the bar and across to the y-axis. Say: Kate is 110 cm tall.
- Repeat the previous step for Lily and Peter.

Open your books

- Open the SB at p7 and draw students' attention to the bar chart. Ask: What does the chart show? (The chart shows) Bob's height. Help students to read the chart by saying: When Bob was six, he was… Encourage students to complete your sentence with: 120 cm tall.
- Put students into pairs. Tell them to work together to complete the activity by answering the questions.
- Check answers as a class. There is no definite answer for question 3, however – although we could predict that Bob will be 140 cm one year from now because he has grown 5 cm each year between age 6 and 9, we cannot know this for certain because we grow at different rates at different ages.

Activity 3

Open your books

- Open the SB at p7 and draw students' attention to the chart. Ask: What is Mary's height/hand span/foot length? (Mary's height/hand span/foot length is) 125cm/15cm/21cm. Write *height*, *hand span* and *foot length* on the board.
- Say: Now we are going to take some measurements. Nominate two students to come to the front of the classroom and help you demonstrate how to take each of the measurements.
- Put students into groups. Give each group a tape measure and tell them to take each other's measurements. Remind them to record the results in the chart.
- Nominate a few groups to share their results. Write the results on the board and encourage students to compare them by asking questions such as: Are the results similar or different? Who is the tallest? Which students have the same hand span?
- Write *This year, Mary is 125cm.* on the board. Ask: What about next year? What do you think? Encourage students to share their ideas, then turn to p8 to see how Mary thinks her measurements will have changed in one year's time. Provide language support by asking questions such as: What does Mary think her height will be next year? What is the difference in centimetres?

Extension

Give students other measurements to take, such as hand length, head circumference and waistline.

Teacher Tips

Remind students to be carefully not to wrap the tape measures too tightly around any body part.

Now I Know ...

- Ask: How do you change as you grow? How do you know that? Encourage students to share their ideas.
- Read and/or listen to the recording and ask students to repeat: *We grow. We get bigger. We can measure our changes.*

Let's Practise!

- Ask: What was your height when you were [age]? (students' own answers)
- Open the SB at p8 and draw students' attention to the chart. Tell them to draw a bar chart to show their heights at different ages. Remind students that they may look back at Bob's chart on p7 for help.