



# Growing

**Recommended year group:** Year 7

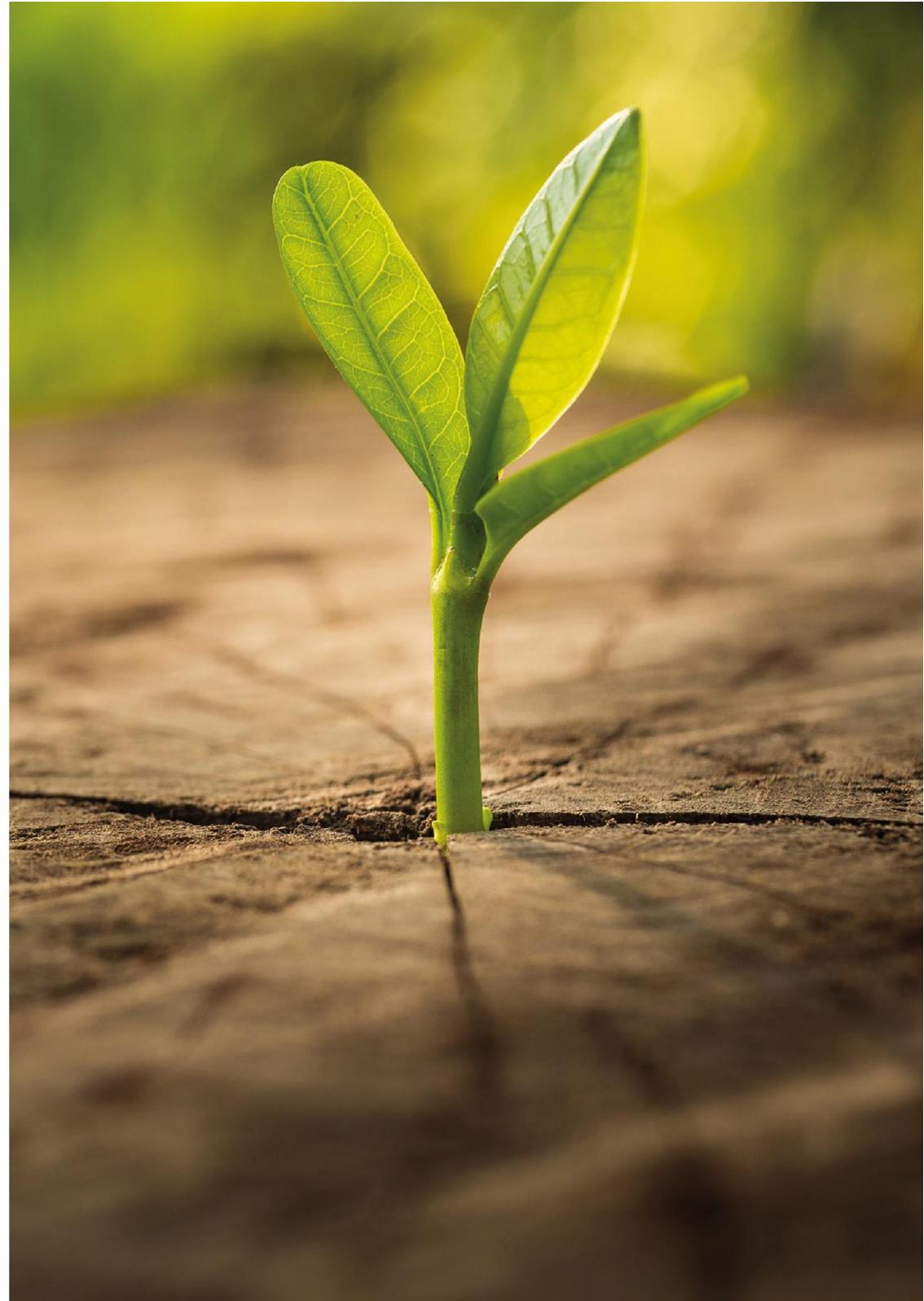
**Subject focus:** Science, Geography, RSE

## Driving Question

What factors affect growth?

### Introduction

This intention of this theme is to explore the variety of ways 'growing' can be applied to life. Students will study plant and human growth through investigating the conditions that allow growth to take place. In addition, they will study population growth and factors that contribute to this with a particular focus on comparisons of HICs and LICs. Furthermore, students will consider personal issues around 'growing' such as peer pressure and friendships.



## Assessment outcomes

**Lesson 1: How and why do plants grow?:** Explanation of the processes that support plant growth.

**Lesson 3: How does population grow?:** Graph analysis.

**Lesson 4: Introduction to spreadsheets:** Data presented in the form of graphs and charts..

**Lesson 7: Microorganisms experiment: Part 2:** Written conclusion to complete stage 1-9 of scientific investigation.

**Lesson 8: Who will we grow up to be?:** Create a magazine article to inform Year 7 students about building positive friendships.

**Lesson 10: Read: Nicholas Nickleby:** How does the writer use language to show that schools for working class boys in the 19th century placed more emphasis on brutal physical punishment rather than on any academic learning?

**Lesson 12: Big Write: Adrian Mole:** Write a series of diary entries in the style of Adrian Mole.

## Key vocabulary

19th century, active cell, adjectives, adverbs, amygdala, analyse, auditory area, author's attitude, boundaries, brain development, brain stem, Broca's area, cane, cell reference, central nervous system, cerebellum, chlorophyll, chronological, columns, competition, conclusion. evaluation, consent, control, data, decompose, dispersal, education, effect (on a reader), extract, formula, friendship, frontal lobe, generosity, genre, germination, graph, high income countries, historical perspective, honesty, humour, hypothesis, kindness, laterisation, low income countries, mechanical dispersal, meristem, method, motor area, narrative/narrator, occipital lobe, parietal lobe, peer pressure, photosynthesis, pollination. stomata, population, population growth, prediction, privacy, relationships, respect, results, rows, somatosensory area, spreadsheet, synaptic pruning, temporal lobe, text label, trust, value, variable, Victorian era, visual area, Wernicke's area, worksheet, xylem, yeast

## Linked reading

*Nicholas Nickleby* by Charles Dickens, 1839

This classic story focuses on the life and adventures of Nicholas Nickleby. After his father dies, Nicholas, only a young man himself, must support his mother and sister.

## Flipped learning opportunities

- **Lesson 1: How and why do plants grow?-** Research information about the greatest pollinator on planet Earth. Add a definition for each of the keywords. Use the links to find out more about these keywords.
- **Lesson 2: Microorganisms experiment: Part 1–** Microorganisms Flipped Learning
- **Lesson 5: What are the effects of population growth? –** Effect flipped learning.



## People, Place and Time

The 'People, Place and Time' resources provide support to key knowledge throughout the theme. More specifically:

- **People:**
- **Place:**
- **Time:**

## Family learning opportunities

### Ideas for discussion at home:

Discuss the highlights of a holiday, journey or memorable experience and writing down the key points as a diary entry. Include what happened, your opinions and how you felt.

Observe the changes in a slice of bread over a period of a few days. Discuss why the bread has green bits on it after a few days

Grow some flowers/plants/vegetables together.

## Extended learning opportunities

Students could use these ideas to explore different features of the theme.

### Careers

These ideas can be used alongside the lessons in order to discover career pathways associated with key elements of learning from this theme.

*Explore careers in Biology*

<https://nationalcareers.service.gov.uk/job-profiles/biologist>

*Explore careers in Healthcare*

<https://nationalcareers.service.gov.uk/job-profiles/paediatrician>

### Places to visit

This section offers a selection of virtual trips which support knowledge of key areas and attractions from the lessons

[Eden Project Rainforest Biome tour](#)

[A Virtual Tour of Reading Hospital: Neurology](#)

## Cultural capital suggestions

**Read:** *The Science of Puberty* – Kooth article.

This article supports students with understanding what happens to their brains during puberty.

**Look:** *The Story of Growing Up Painting* by Ivana Dostal.

This artwork represents the transition between childhood and adolescence.

**Listen:** [All About Periods](#) by Kooth

Join Beth, Katja-Anja, and newcomer Elsa as they sort fact from fiction when they talk all about periods.

## Lessons

Lesson title	Subject	Essential knowledge/concepts	Competencies	National curriculum coverage
<b>Lesson 1: How and why do plants grow?</b>	Biology	Outline the process of photosynthesis.  Label the structure of a plant.  Describe the process of pollination and dispersal.	<b>SC.CS.01</b> Using Scientific Ideas	<b>KS3 Science- Biology:</b>  Photosynthesis: The reactants in, and products of, photosynthesis, and a word summary for photosynthesis.
<b>Lesson 2: Microorganisms experiment: Part 1</b>	Biology	Investigate the impact of yeast on decomposing food.  Plan a simple investigation that tests the effect of yeast on food.  Write a suitable hypothesis for this investigation.	<b>SC.ES.01</b> Planning Scientific Enquiries	<b>KS3 Science:</b> Working scientifically: Experimental skills and investigations  <b>Biology:</b> Aerobic and anaerobic respiration in living organisms, including the breakdown of organic molecules to enable all the other chemical processes necessary for life.  The differences between aerobic and anaerobic respiration in terms of the reactants, the products formed and the implications for the organism.
<b>Lesson 3: How does population grow?</b>	Geography	Examine a range of data on the world's population.  Explain how population has changed over time and what indicators are used to measure population.	<b>SE.GE.02</b> Demonstrate understanding of human geography concepts and their interrelationships with places, environments and processes.  <b>SC.PE.02</b> Develop data analysis and statistics skills through presenting and interpreting observations in order to make and evaluate reasoned	<b>KS3 Geography:</b>  Understand the processes that give rise to key physical and human geographical features of the world. Are competent in the geography aims to ensure that all pupils: collect, analyse and communicate a range of data. Understand through the use of detailed place based exemplars at a variety of scales, the key processes in human geography relating to population and urbanisation.

			conclusions that may lead to further investigation.	
<b>Lesson 4: Introduction to spreadsheets</b>	Computing	<p>Identify and describe the components of a spreadsheet.</p> <p>Use simple formulas in a spreadsheet.</p> <p>Create and interpret graphs and diagrams for simple data.</p>	<b>TL.PU.02</b> Analysing Information Using ICT (Excel)	<p><b>Computing:</b></p> <p>The national curriculum for computing aims to ensure that all pupils: are responsible, competent, confident and creative users of information and communication technology.</p>
<b>Lesson 5: What are the effects of population growth?</b>	Geography	<p>Identify effects of population growth.</p> <p>Explain the effects of population growth on a particular country.</p> <p>Compare the effects of population growth between two countries.</p>	<b>SE.GE.02</b> Demonstrate understanding of human geography concepts and their interrelationships with places, environments and processes.	<p><b>Geography:</b></p> <p>Understand the processes that give rise to key physical and human geographical features of the world. Are competent in the geography aims to ensure that all pupils: collect, analyse and communicate a range of data. Understand through the use of detailed place based exemplars at a variety of scales, the key processes in human geography relating to population and urbanisation.</p>
<b>Lesson 6: Brain Development</b>	Science	<p>Identify key areas of the brain which reflect development and growing.</p> <p>Explain the functions of different parts of the brain.</p> <p>Apply the main areas of the brain.</p>	<b>SC.CS.01</b> - Using Scientific Ideas	<p><b>KS3 Science:</b></p> <p>Biology “the nervous system” - Brain Development</p>

<b>Lesson 7: Microorganisms experiment: Part 2</b>	Science	Evaluate the results of your experiment.  Explain your results in a conclusion.	<b>SC.ES.03:</b> Collecting Data  <b>SC.PE.03:</b> Making and Explaining Conclusions	<b>KS3 Science:</b>  Working scientifically: Experimental skills and investigations, Analysis and Evaluation.
<b>Lesson 8: Who will we grow up to be? Friendship</b>	RSE	Understand the nature of friendship.  Identify and explain the importance of having good friends.  Define what peer pressure is and develop strategies to avoid these situations.	<b>PS.PR.02</b> Demonstrates honesty and responsibility to oneself and others (respect).	<b>Relationships and Sex Education (RSE): Secondary:</b>  The aim of RSE is to give young people the information they need to help them develop healthy, nurturing relationships of all kinds, not just intimate relationships. It should enable them to know what a healthy relationship looks like and what makes a good friend, a good colleague and a successful marriage or other type of committed relationship.
<b>Lesson 9: Safe Relationships and Peer Pressure</b>	RSE	Identify negative influences.  Describe different responses to peer pressure.	<b>PS.PR.01</b> Defines and demonstrates respect for self, others, and property	Pupils should know: The characteristics of positive and healthy friendships (in all contexts, including online) including: trust, respect, honesty, kindness, generosity, boundaries, privacy, consent and the management of conflict, reconciliation and ending relationships. This includes different (non-sexual) types of relationship.  Practical steps they can take in a range of different contexts to improve or support respectful relationships.
<b>Lesson 10: Big Read: Nicholas Nickleby</b>	English	Explain the key themes in a literary extract.  Analyse Dickens' language used in Nicholas Nickleby.	<b>RL.ID.01:</b> Make logical inferences from texts	<b>KS3 English:</b>  Develop an appreciation and love of reading, and read increasingly challenging material independently through a pre-1914 text. Read critically through knowing how language, including figurative language, vocabulary choice, grammar, text structure and organisational features, presents meaning.

<p><b>Lesson 11: Big Write: Adrian Mole</b></p>	<p>English</p>	<p>Assess point of view in a text, focusing on the narrative voice.</p> <p>Identify writing techniques.</p> <p>Reproduce an author's writing voice (character voice).</p>	<p><b>CL.WP.02:</b> Produce clear and coherent writing in which the development, organisation, and style are appropriate to task, purpose, and audience (Voice).</p>	<p><b>KS3 English:</b></p> <p>Plan, draft, edit and proof-read through: amending the vocabulary, grammar and structure of your writing to improve its coherence and overall effectiveness</p>
<p><b>Lesson 12: Careers</b></p>				