## Learning hook

1. Begin the lesson by asking students what they believe plants need to live and grow. Make a list of their ideas the board.
2. When complete, read students the book [Growing vegetable soup by Lois Ehlert](http://www.bookdepository.com/Growing-Vegetable-Soup-Lois-Ehlert/9780152325817?ref=grid-view).
3. After reading, ask students some questions about the story. For example:

	* What did they grow?
	* What tools did they need to help grow the vegetables?
	* What were some of the things the plants needed to grow?
	* Which vegetables grew above the ground and which grew below?
	* What did they need to do to plant the seed?

## Learning map and outcomes

1. Share learning intentions with students. Tell them:

'We are going to investigate how to plant a seed and create a set of instructions to help teach others about growing vegetables.

	* We are going to learn about what a seed needs to grow into a plant.
	* We are going to learn about different parts of a plant.'
2. Explain to students that working in pairs, they will be planting a fruit or vegetable.

	* Ask pairs to indicate their preference for which seed they would like to plant.
	* Inform each pair what they will be planting.
	* Provide pairs with an ice cream stick to enable them to write or draw their plant on the stick so they can remember which seeds are planted.
	* Note to teacher: Buy some packets of seeds that can be easily grown by students, e.g. herbs, lettuce, tomatoes, carrots, peas, spinach, rocket.

You could also focus on the skillset and mindsets that learners might need to adopt and use during this project, this ties in with the [Creative and Critical Thinking Capabilities](http://www.australiancurriculum.edu.au/generalcapabilities/critical-and-creative-thinking/introduction/key-ideas). Read the [effective teaching section, learning: knowledge and beyond](https://www.digitaltechnologieshub.edu.au/primary-teachers/effective-teaching/learning-knowledge-and-beyond).

## Learning input

Stage 1: planting

1. Prior to going outside, show students how to use the iPad camera application, including the focus function to take photos.

	* Provide opportunity for each pair to take some photos around the classroom.
	* Explain to students that they are going to be moving outside to plant their seed. They will need to use their photography skills to capture each step in planting the seed as these will be used in another activity.
	* You may wish to discuss planting process with students prior to leaving the classroom.
2. Take class outside to the space where you are intending to plant the seeds. Model the process of planting a seed:

	* Break up the soil
	* Add the fertiliser/plant food
	* Dig a hole
	* Place a seed in the hole
	* Cover the hole
	* Water the seed
	* Cover with mulch

Students practise taking photos using the camera application on the iPads.

After watching the teacher demonstration, students have the opportunity to plant their own seed in pairs.

* + One student takes photographs with the iPad to capture each step of the journey while the other student plants the seed.
	+ Once complete, students place the labelled ice-cream stick in the ground behind their seed.

Note: Depending on the year level, you may wish to demonstrate one step of the process and ask the students to complete that step then come back for the next.

Alternatively, for the older students, give the students a longer set of instructions to follow.

Also, if you do not have a space in the garden, the seeds could also be planted in small pots or polystyrene or paper cups.

1. Provide opportunity for students to complete each of the steps to plant their seed. Remind them that they need to capture each step of the process using the Camera application on the iPads.

Stage 2: Documenting sequence of steps (after planting)

* 1. Introduce Pic Collage to Foundation students or Strip Designer to Level 1–2 students.
	On the display screen, model how to insert a picture and write text in the program.
	2. Introduce the idea of an algorithm to Level 1–2 students. For example:

		+ Pose the question about sun safety and wearing hats by asking, ‘Is it sunny outside?’
		+ Students can then think about what they would do if the answer was yes or no. They may say, ‘If yes ➝ get a hat before you play outside. If no ➝ go straight outside to play.’
		+ Show how you would document this using a flowchart on the board.

Provide time for students to practise importing pictures and/or adding text into [Pic Collage](https://www.digitaltechnologieshub.edu.au/docs/default-source/getting-started-f-2/growing-fruits-and-vegetables/5_pic_collage_for_kids_planning.pdf?sfvrsn=2) or [Strip Design](https://www.digitaltechnologieshub.edu.au/docs/default-source/getting-started-f-2/growing-fruits-and-vegetables/6_strip_designer_planning.pdf?sfvrsn=2).

In addition, Level 1–2 students can create a yes/no decision tree on their practice example in Strip Design. For example:

* 1. Are you hungry?
	2. Are you cold or hot? (hot – take off jumper, put on aircon; cold – put on jumper, turn on heater)
	3. Is it wet outside? (ie Do I need a raincoat?)

## Learning construction

(Stage 1: 20-25 minutes each week)

(Stage 2: 1 hour)

Stage 1: planting

Introduce students to the Plant observation journal. Explain to students that they will be drawing or writing their observations of their plant growth over the next few weeks.

Stage 2: documenting sequence of steps

1. Foundation: Explain to students that they will be creating an instruction sheet Pic Collage to describe the steps taken to plant a seed.

Level 1–2: Explain to students that they will be creating an instruction sheet with a help guide using Strip Designer to describe the steps taken to plant a seed.

Remind Level 1-2 students about the use of algorithms (decisions) for their help guide, for example: How do we know if a plant needs water?

	* We check if the soil is dry.
	* If the soil is dry, you water the plant. If not, check another day.
2. All levels: Discuss with students what is expected to be included in the instruction sheet.

	* Explain that the instruction sheet needs to have photos that document each step of process.
	* Discuss with students the importance of having information that describes what is happening in the picture.
	* If students are unable to write short sentences, encourage students to label the pictures with numbers and/or words.
3. Remind all students how to import pictures from the camera roll.

Fast finishers can access any of the websites to help consolidate their understanding of the needs and requirements when planting seeds.

Stage 1: planting

Students draw or write their observations of their plant’s growth. They may also wish to take a photo during each observation phase to use in the Stage 2 section of this learning sequence.

Stage 2: documenting sequence of steps

Students create an instruction sheet +/- help guide using Pic Collage/Strip Designer providing a set of ordered instructions for planting a seed. Depending on targeted level, students should include numbers and labels or sentences in their instruction sheet to help describe the sequence of steps/process.

If a student has completed the task before the end of the session, students may use one of the following websites:

* [KS1 Bitesize](http://www.bbc.co.uk/bitesize/ks1/science/growing_plants/play/)
* [Science Kids](http://www.sciencekids.co.nz/gamesactivities/plantsgrow.html)
* [ABCYA Let Me Grow](http://www.abcya.com/let_me_grow.htm)

## Learning demo

Explain the final task for the unit to students. Talk through how to complete the two sections of the activity.

Foundation students: explain that they need to circle all the things that plants needs to successfully grow. Discuss with the class what each of the pictures are before students go back to their desk to work.

The second section of the task requires students to label parts of a carrot. Explain that they can cut and paste the labels on the carrot or copy and write the words in the correct boxes.

Level 1-2 students: explain that they need to list all the things that plants needs to successfully grow.

The second section of the task requires students to label parts of a fruit or vegetable. Explain that students can draw a picture of the fruit or vegetable they grew or choose another.

Note: Depending on the length of time between initial planting to final completion of the activity, you may wish to re-read the book from the learning hook to focus student’s attention on the task at hand.

Students complete final activity detailing the things plants need to grow by drawing and labelling the different parts of a fruit or vegetable.

Students return the activity to the teacher on completion.

* [Resource: Needs and parts of a plant activity – Foundation](https://www.digitaltechnologieshub.edu.au/docs/default-source/getting-started-f-2/growing-fruits-and-vegetables/9_needs_and_parts_of_plants.pdf?sfvrsn=2)
* [Resource: Needs and parts of a plant activity – Level 1–2](https://www.digitaltechnologieshub.edu.au/docs/default-source/getting-started-f-2/growing-fruits-and-vegetables/10_needs_and_parts_of_plants_1-2.pdf?sfvrsn=2)

## Learning reflection

1. Reflect on the process you have been through over the last (number of) weeks growing the plants and creating your instructional guides.
2. Explain to students that they will be walking around the room to look at three other students' pieces of work, thinking about three specific statements as they look at student work:
	* I like … (positive features)
	* I wonder … (questions you have)
	* Your next step could be … (possible future improvements)
3. Draw students back together and share feedback with the class.

For the artist’s walk, students walk around classroom, 5–10 minutes observing 2 or 3 other students' work, thinking about three specific statements as they look at the work.

Students share feedback about a piece of work they saw.

iPads with completed instruction sheets saved to the camera roll or printouts of the final work.

## Curriculum links

| Links with Digital Technologies Curriculum Area |
| --- |
| **Strand** | **Content Description** |
| **Knowledge and Understanding** | Recognise and explore digital systems (hardware and software) for a purpose [(AC9TDIFK01)](https://v9.australiancurriculum.edu.au/f-10-curriculum.html/learning-areas/digital-technologies/foundation-year/content-description?subject-identifier=TECTDIFY&content-description-code=AC9TDIFK01&detailed-content-descriptions=0&hide-ccp=0&hide-gc=0&side-by-side=1&strands-start-index=0&subjects-start-index=0&view=quick).Identify and explore digital systems and their components for a purpose [(AC9TDI2K01)](https://v9.australiancurriculum.edu.au/f-10-curriculum.html/learning-areas/digital-technologies/year-1_year-2/content-description?subject-identifier=TECTDIY12&content-description-code=AC9TDI2K01&detailed-content-descriptions=0&hide-ccp=0&hide-gc=0&side-by-side=1&strands-start-index=0&subjects-start-index=0&view=quick). |
| **Processes and Production Skills** | Use the basic features of common digital tools to create, locate and communicate content [(AC9TDI2P04)](https://v9.australiancurriculum.edu.au/f-10-curriculum.html/learning-areas/digital-technologies/year-1_year-2/content-description?subject-identifier=TECTDIY12&content-description-code=AC9TDI2P04&detailed-content-descriptions=0&hide-ccp=0&hide-gc=0&side-by-side=1&strands-start-index=0&subjects-start-index=0&view=quick). |

| Links with other Learning Areas |
| --- |
| **Learning Area** | **Strand and Content Description** |
| **Science** | Science UnderstandingLiving things have basic needs, including food and water ([ACSSU002](http://www.australiancurriculum.edu.au/science/curriculum/f-10?layout=1#cdcode=ACSSU002&level=F)).Living things have a variety of external features ([ACSSU017](http://www.australiancurriculum.edu.au/science/curriculum/f-10?layout=1#cdcode=ACSSU017&level=1)).Science as a Human EndeavourScience involves observing, asking questions about, and describing changes in, objects and events ([ACSHE013](http://www.australiancurriculum.edu.au/science/curriculum/f-10?layout=1#cdcode=ACSHE013&level=F)).Science Inquiry SkillsParticipate in guided investigations and make observations using the senses ([ACSIS011](http://www.australiancurriculum.edu.au/science/curriculum/f-10?layout=1#cdcode=ACSIS011&level=F)).Share observations and ideas ([ACSIS012](http://www.australiancurriculum.edu.au/science/curriculum/f-10?layout=1#cdcode=ACSIS012&level=F)).Represent and communicate observations and ideas in a variety of ways ([ACSIS029](http://www.australiancurriculum.edu.au/science/curriculum/f-10?layout=1#cdcode=ACSIS029&level=1)). |
| **English** | Literacy Create short texts to explore, record and report ideas and events using familiar words and beginning writing knowledge ([ACELY1651](http://www.australiancurriculum.edu.au/english/curriculum/f-10?layout=1#cdcode=ACELY1651&level=F)).Construct texts using software including word processing ([ACELY1654](http://www.australiancurriculum.edu.au/english/curriculum/f-10?layout=1#cdcode=ACELY1654&level=F)).Construct texts that incorporate supporting images using software including word processing programs ([ACELY1664](http://www.australiancurriculum.edu.au/english/curriculum/f-10?layout=1#cdcode=ACELY1664&level=1)).Construct texts featuring print, visual and audio elements using software, including word processing programs ([ACELY1674](http://www.australiancurriculum.edu.au/english/curriculum/f-10?layout=1#cdcode=ACELY1674&level=2)). |

## Assessment

### Opportunities for assessment

You may wish to read the sections on [formative assessment](https://www.digitaltechnologieshub.edu.au/primary-teachers/effective-teaching/assessment-formative) and [summative assessment](https://www.digitaltechnologieshub.edu.au/primary-teachers/effective-teaching/assessment-summative) from the effective teaching section of the site.

1. Plant observation journal

	* To be completed in the Learning construction (Stage 1) section of this sequence
	* Can be used to assess Science and Design Technologies outcomes.
2. Planting a vegetable instruction sheet

	* To be completed in the Learning construction (Stage 2) section of this sequence
	* Rubric has been created to assess the instruction sheets
	* Can be used to assess Digital Technologies outcomes
3. Needs and parts of a plant activity

	* To be completed in the Learning demo section of this sequence
	* Can be used to assess Science and Design Technologies outcomes.

Students follow instructions as described in the various sections as described throughout this learning sequence.

* [Resource: Assessment rubric for Pic Collage for Kids – Foundation](https://www.digitaltechnologieshub.edu.au/docs/default-source/getting-started-f-2/growing-fruits-and-vegetables/11_assessment_rubric_f.pdf?sfvrsn=2)
* [Resource: Assessment rubric for Strip Designer – Level 1–2](https://www.digitaltechnologieshub.edu.au/docs/default-source/getting-started-f-2/growing-fruits-and-vegetables/12_assessment_rubric_1-2.pdf?sfvrsn=2)

Example of student work

* [Resource: Pic Collage for Kids – Example of student work from a Foundation class](https://www.digitaltechnologieshub.edu.au/docs/default-source/getting-started-f-2/fruit-and-vegetable-growing/resource-pic-collage-for-kids-example-of-student-work-from-a-foundation-class.png?sfvrsn=0)
* [Resource: Strip Designer – Example of student work from a Foundation class](https://www.digitaltechnologieshub.edu.au/media/lbulhn5o/planting-fuit-and-vegetables_6_strip_designer_planning.pdf?sfvrsn=2)