



**Subject Area:
Digital Technologies**

Lesson Overview

In this module, students will explore egg production in Australia. They will gain insight into the egg industry, the ethical considerations of consumers, the day-to-day work experiences of egg farmers, and consideration around sustainability and planning for the future in the industry.

Students will use an inquiry-based approach to research and apply information throughout this unit, incorporating a range of digital technologies to present their information to an audience and publish it online. They will use the Solution Fluency learning model designed by Crockett, Jukes and Churches (2012) which will guide their work through six phases: Define, Discover, Dream, Design, Deliver and Debrief.

Lesson Intentions

Students will understand:

- The importance and complexity of the Australian egg industry
- Considerations around raising hens
- The considerations of different groups of consumers
- Sustainability and future planning in the egg industry
- The Solution Fluency model and its use in Design and Digital Technology

Teachers Notes

Resources and Materials

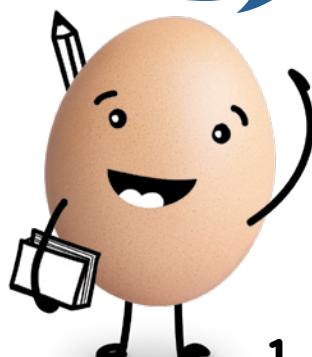
- Australian Eggs website:
www.australianeggs.org.au/
- Supplementary interactive whiteboard resources
- Digital devices connected online (for research)
- Sticky notes
- Activity sheets (printed, enlarged to A3)
<https://www.australianeggs.org.au/education/secondary/eggs-from-farm-to-plate/>
- Felt tip pens, writing mediums
- Large paper (A2)

This unit is supported by interactive whiteboard resources available at:

<https://www.australianeggs.org.au/education/secondary/eggs-from-farm-to-plate/>.

For schools who do not have an interactive whiteboard or have limited access to an interactive whiteboard; please note that the resources can be downloaded as a pdf document, printed or accessed with shared or student-owned electronic devices. They can also be used simply as teacher inspiration if you wish to create your own resources to support this unit of work.

**Follow me,
let me
Eggsplain!**





Teachers Notes

Differentiation

As with all our lesson plans, we encourage teachers to differentiate the activities by making any necessary modifications in order to cater for diverse student learning needs.

Note: the suggested duration of the activities found within this module may require adjustment to cater for the needs of your students.

Assessments

There are a number of informal assessment opportunities throughout this lesson including:

- Class discussion
- Student questioning
- Student workbooks (activity sheets)
- Observation
- Peer feedback
- A summative assessment of the finished digital resource
- An assessment rubric

Stage 4 Curriculum links

Digital Technologies

- **ACTDIP025** Acquire data from a range of sources and evaluate authenticity, accuracy and timeliness
- **ACTDIP026** Analyse and visualise data using a range of software to create information, and use structured data to model objects or events
- **ACTDIP032** Plan and manage projects that create and communicate ideas and information collaboratively online, taking safety and social contexts into account
- **ACTDEK032** Analyse how food and fibre are produced when designing managed environments and how these can become more sustainable
- **ACTDEK029** Investigate the ways in which products, services and environments evolve locally, regionally and globally and how competing factors including social, ethical and sustainability considerations are prioritised in the development of technologies and designed solutions for preferred futures

Media Arts

- **ACAMAM068** Develop and refine media production skills to shape the technical and symbolic elements of images, sounds and text for a specific purpose and meaning
- **ACAMAM069** Plan, structure and design media artworks that engage audiences

Science

- **ACSSU112** Interactions between organisms, including the effects of human activities can be represented by food chains and food webs
- **ACSH120** Solutions to contemporary issues that are found using science and technology, may impact on other areas of society and may involve ethical considerations
- **ACSH121** People use science understanding and skills in their occupations and these have influenced the development of practices in areas of human activity
- **ACSH135** Solutions to contemporary issues that are found using science and technology, may impact on other areas of society and may involve ethical considerations
- **ACSH136** People use science understanding and skills in their occupations and these have influenced the development of practices in areas of human activity

Humanities (Geography)

- **ACHGK045** The influence of environmental quality on the liveability of places
- **ACHGK047** Strategies used to enhance the liveability of places, especially for young people, including examples from Australia and Europe
- **ACHGK051** Human causes and effects of landscape degradation
- **ACHGK059** Management and planning of Australia's urban future

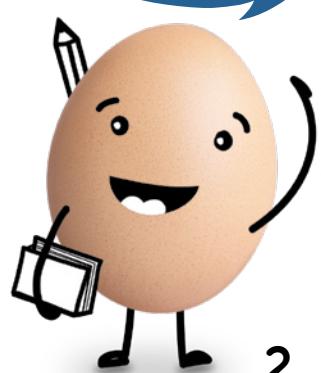
Cross curriculum priorities

- Sustainability
- Asia and Australia's engagement with Asia

General capabilities

- Literacy
- Numeracy
- Information and Communication Technology (ICT) Capability
- Critical and Creative Thinking
- Personal and Social Capability
- Ethical Understanding

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let me
Eggsplain!





Stage 1: DEFINE

1. Explain to students that they will be learning to solve a real-life problem with Solution Fluency in this project.
2. Give the students the following definition of Solution Fluency:

"Solution Fluency is the ability to think creatively to solve problems in real time by clearly defining the problem, designing an appropriate solution, delivering the solution and then evaluating the process and the outcome. Solution Fluency is defined by the 6Ds process." (Hubspot.net, 2019)

3. Present the following problem to the students, explaining they will be using Solution Fluency to solve it in groups:
Design and produce a 5-8 min documentary to develop the understanding of children in Years 5 and 6 about egg production in Australia. Include information about:
 - Different egg production systems
 - Social perceptions and values about egg production
 - Sustainability
4. Explain that this session will introduce the 'Define' stage of Solution Fluency. Talk about what this might mean and encourage students to generate ideas about what this stage might include.
5. Ask for students' ideas and brainstorm a list of any other social groups who encounter barriers to their nutritional intake.

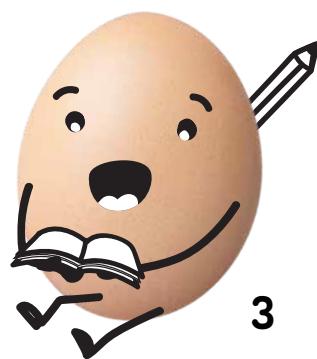
Activity 1

1. Open a discussion about the task and what information students will need in order to complete it appropriately. Some ideas might include:
 - Documentary styles
 - How to produce a documentary using an app or website
 - Information about the egg industry
 - Information about egg production systems
 - Ethical and sustainability concerns around egg production
 - Techniques for interviewing or collecting data
2. Highlight the main aspects of the project as 'delving into the details of the egg production industry' and 'creating a documentary about it'; these are the main objectives for the Define stage.
3. Collect students' thoughts on the egg production industry in the brainstorm slide entitled: **What do we know already?**
4. Split students into groups of four. These will be their groups for the entirety of this project. Encourage groups to create their own activity sheet brainstorm entitled: **What we need to know**. This will be the first stage of their plan and will need to be kept safe to refer to at a later date.



Activity 2

1. Bring the class back together to watch two clips with different styles of documentaries to demonstrate the differences. Ask students to describe which they found to be more effective in delivering information and achieving their objective. You can use the following examples provided in the teacher resources slides or find your own.
A short documentary on organic egg production: https://www.youtube.com/watch?v=Rk2d1iT_Oo
A longer documentary made by Australian Eggs:
<https://www.youtube.com/watch?v=YCHqU2MWTxQ>
2. Discuss the differences in the two examples and create a class list of criteria for a well presented documentary.
3. Encourage groups to research a range of documentary styles and complete the activity sheet: **What makes an interesting and informative documentary?** as a group.
4. Plenary. Bring the class back together to share their findings on what elements are required to produce an effective documentary. For example: different locations included, variety of relevant people, interviews, music, clear voiceover, etc. Refer back to the class criteria and add to it with the groups' ideas if necessary. Think about what aspects will be appropriate for a documentary made for upper primary school children as opposed to one made for adults. Create a class document showing criteria for an effective documentary for this specific age group, e.g. appropriate language, images, less text on screen, and save to refer back to at a later date. This criteria will form a self-assessment document for each group when they plan and deliver their documentary.





Stage 2: DISCOVER

Activity 1

1. Explain to students that in this session they will be completing the Discover stage of the Solution Fluency process.
2. Gather ideas from students about what they might be discovering and record on Interactive Whiteboard (IWB) or Flipchart.
3. From students' ideas, create and pose some 'Discovery Questions' for groups to research. You can use the examples below or create your own.
4. Give each group one question to research, which they will present to the class later, creating an 'Ask the Expert' scenario.

Example Discovery Questions:

- What are the main egg production systems?
 - What are the legal requirements for keeping hens at school? At home? For egg production?
 - How can hen housing be adapted for different environments?
 - What are the basic needs for hens?
 - How do egg farmers recognise and support hen health needs?
 - What are the ethical concerns of selling eggs in today's market?
 - How can egg farmers plan for and work towards a sustainable future?
 - How are eggs marketed differently to other sources of protein?
5. Plenary. Bring the class back together and give each 'Expert' group an opportunity to share what they have discovered. Encourage other groups to take notes on and question the topics they did not research.
 6. Display each groups' research notes on the wall to refer to throughout the Discover stage.

Teacher tips:

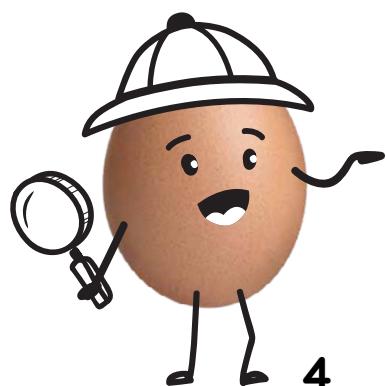
- We recommend that your discovery questions cover at least these topics to ensure students have the opportunity to explore this topic holistically.
- Ensure that students have enough time to research the answers to the discovery questions.

Activity 2

1. Display and discuss the images of the three main egg production systems on the IWB. Encourage students to think about the positive and negative aspects of each system as well as the opportunities each system presents for farmers and consumers. Record their ideas on the **Plus, Minus, Opportunities** slide on the IWB.
2. Revisit the information gathered from the discovery questions.
3. In their groups, students are to create a design poster of 'the perfect hen house' for commercial egg production (i.e. not just a hen house for your backyard). They should think about hen needs, hen health, economic considerations, ethical considerations, sustainability, legal considerations for keeping hens, and ways to maximise egg production. To support their design, students should present a paragraph justifying their creative choices. Their writing should be reflective of their learnings throughout the task so far.
4. Bring the class together for each group to present their design and collect any constructive criticism.
5. Plenary. Groups then make any necessary changes to their design based on the feedback from their peers and add to their reflection paragraph, explaining these changes.

Teacher tip:

Provide large paper (A2) for the activity in point 3 to allow students to add details and notes around their design.





Stage 2: DISCOVER

Activity 3

1. Explain that documentaries present true facts. In order to do this, groups will need to research the thoughts and opinions of real egg consumers in order to accurately present this information. Groups will design a research questionnaire to present to some egg consumers, with the purpose of gathering information about egg buying habits and their opinions on egg production, to inform their documentary.
2. Collect some ideas about what makes an effective interview. You may wish to show some examples. Encourage students to think about the length of the interview, who they will be collecting data from and where they will be.
3. Collect some ideas from groups about what they might need to discover. Record these ideas on the IWB.
4. Give groups time to design a short questionnaire to gather information from consumers about their egg buying habits and their opinions on egg production. Groups should be given an opportunity to present their survey or questionnaire to at least five different consumers of eggs (could be done as a homework activity).

Teacher tip:

Surveys should aim to be short, with some opportunities for full sentence answers and some opportunities for easily measurable attitudes based on the Likert scale (found here: <https://www.surveymonkey.com/mp/likert-scale/>). This should increase participant engagement and give students a wider sample of consumers. Students should be aware of the potential sensitive nature of the topic of egg production systems and that some participants may find it an emotional topic.

5. Plenary. Bring the class together and give groups the opportunity to present their results and discuss any major trends in opinions or egg buying habits.

Stage 3: DREAM

Activity 1

1. Explain to students that the Dream stage is centered around planning their documentary. Refer back to the class created criteria for an effective documentary compiled in the Define stage and revisit some of the main ideas about what their documentaries should include and the way information should be presented.
2. Draw students' attention to the way facts, figures and images are referenced in documentaries. Explain that there are certain ethical considerations when posting information online that students should be aware of throughout this project. It is essential that their information is presented truthfully and ethically.
3. Encourage groups to find four images of hens online and two different quotes from farmers about their egg farms, recording where they found them. They should be able to name the website name, article title (if relevant), author of the article (if relevant), name of farmer (if quoting) and include the date they accessed the website. Students should record their references in the following way:
For images:
Australian Eggs. (2019). Feeding the chooks. [online]



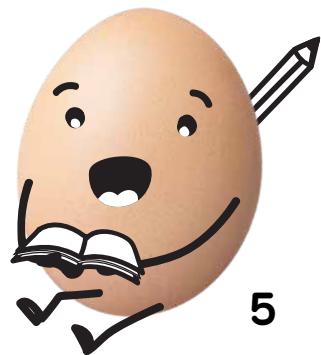
Available at: <https://www.australianeggs.org.au/learn-about-egg-farming/> [Accessed Feb. 2019].

For quotes:

"Australian egg farmers produce 16.9 million eggs every day to feed the nation"

Australian Eggs. (2019). Learn about Egg Farming. [online]

Available at: <https://www.australianeggs.org.au/learn-about-egg-farming/> [Accessed Feb. 2019].





Stage 3: DREAM

Activity 2

1. Explain that another consideration they must be aware of is obtaining rights to include footage of other people in their documentary, i.e. people interviewed. To ensure they are being compliant, they must confirm that the interviewee agrees to being filmed and understands the film being will be uploaded online. They also agree to waive any right to being paid for their opinion and once they have signed in agreement, the student retains the right to post the interview in the public domain.
2. Show students the **Consent Form Checklist** slide on the IWB and draw their attention to how information is presented clearly, so participants are aware of exactly what they are agreeing to.
3. Groups then design their own consent forms to use with their interviewees.
4. Plenary. Bring the class back together to give each group the opportunity to show their consent form and collect any feedback from their peers.
5. Groups should make any necessary changes to their consent form based on the feedback they receive.

Activity 3

1. Ask students if they know of any video making software that is easily accessible on their devices or on school computers. Our recommendations are to use either iMovie or Adobe Spark (this needs a school account to sign in). However, there are many free versions (with fewer options) available such as VideoPad Video Editor (<https://videopad-video-editor.en.softonic.com/>), Avidemux (<https://avidemux.en.softonic.com/>) and OpenShot Video Editor (<https://www.openshot.org/>).
2. Collect students' ideas and briefly look at each option on the IWB.
3. Groups choose their video making option and create a user guide for making a video. They must include instructions for uploading video clips from a device, cutting clips together, inserting images and text, inserting a voiceover and saving the file (this shows each group's understanding of their chosen software and highlights any difficulties which may arise with each option during the planning stage, rather than the production stage).
4. Groups assess each others' user guides to access the software chosen, providing feedback on how clear the instructions are and any changes that need to be made.

Teacher tip:
Some students may want to include background music in their documentary to showcase their digital creativity and skills. Please ensure that any music used is checked for copyright before being included in any student documentaries! Royalty free music can be found with a simple internet search.

Stage 4: DESIGN

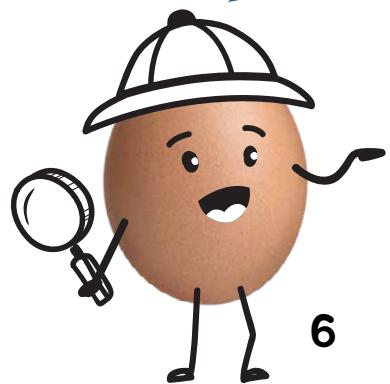
Activity 1

1. Encourage groups to review what they have learnt about making documentaries so far and revisit the information about egg production and hen housing. Explain that groups will use the **Documentary Planning Activity Sheet** to design their documentary, checking with the pre-written criteria from the Define stage and the research questions from the Discover stage to ensure their plan is well organised and includes appropriate content.

Activity 2

1. Bring the class together to explain and discuss the example storyboard.
2. Each group now uses their plan to organise their content into a storyboard, using the **Documentary Storyboard Plan Activity Sheet**. Explain how using this plan will help groups to organise their information and give them a clear filming schedule, as well as an opportunity to ensure their script and scenes are relevant to each other.
3. Give the groups an opportunity to develop their storyboard.
4. Groups are to self-assess their storyboard against the class criteria and make any necessary changes to their script or organisation.
5. Once all groups have had their storyboards and completed scripts approved, they are ready to begin filming and producing their documentary. Ensure students have ample time to do this. Some filming may have to be completed outside of school hours, while most of the production should be completed in school time on an appropriate device.
6. Plenary. Groups assess their finished documentary against the class criteria. Does anything need to be changed or added? Students should evaluate their work and present their findings to the class.

Teacher tip:
Encourage students to time themselves reading their finished script to get an idea of how long their documentary will be.





Stage 5: DELIVER

Activity 1

1. Discuss why feedback is useful and how it can help improve the approach they take to developing their documentary. Collect students' ideas around this and display on the IWB. Keep the focus on positive language and supporting each other.
2. Groups are given an opportunity to present their documentary to the class.
3. Each group collects feedback in the form of constructive criticism related to the class criteria on the **Peer Assessment Feedback Activity Sheet**.
4. Groups make any relevant changes to their documentary based on the feedback provided.
5. Plenary. Individually, but using their group's **Peer Assessment Feedback Sheet**, students write a paragraph reviewing their documentary, noting any feedback that was given and resulting changes. They should make an effort to highlight the result of those changes on their documentary and how it supports in meeting the criteria more effectively.

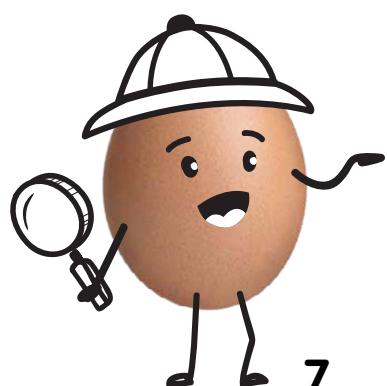
Teacher tip:
Some changes may include more filming, reorganisation of their documentary or cutting out material. Students should be given ample time to complete this stage.

Stage 6: DEBRIEF

Activity 1

1. Groups should have an opportunity to present their documentary to the specified audience (a class of year five and six students and their teachers) before publishing their work on TeacherTube or school blog if preferred. If there is not an opportunity to do this, groups may present their reviewed and updated documentary to the class for a second time, explaining any changes that were made.
2. If students do present to primary students and teachers, they should again collect any feedback on the **Audience Assessment Feedback Sheet**.
3. Groups then use the feedback they collected to determine whether they will make any changes to their documentary or script.
4. Groups publish their documentaries on TeacherTube, to help other students research the topic of egg production in Australia.
5. Teachers should retain a copy of each group's documentary for assessment purposes.

Teacher tip:
All finished documentaries should be approved by a teacher and checked for appropriate content, compliance and ethical actions before being published online. Some students may wish to include background music as part of their documentary. Please ensure that all music has been checked for copyright. Royalty free music can be found with a simple internet search!





Further Reading and References

- Australian Eggs (2019). Learn About Egg Farming: An Egg's Journey From Farm To Kitchen. [online] Australian Eggs. Available at: <https://www.australianeggs.org.au/learn-about-egg-farming/> [Accessed 7 Jan. 2019].
- Crockett, L., Jukes, I. & Churches, A. (2012). Literacy Is NOT Enough: 21st Century Fluencies for the Digital Age. Corwin.
- Eggfarmersaustralia.org. (2019). Egg Farmers of Australia | The voice of Australian egg farmers. [online] Available at: <http://eggfarmersaustralia.org/> [Accessed 7 Jan. 2019].
- Hubspot.net. (2019). Solution Fluency Quickstart Guide. [online] Available at: http://cdn2.hubspot.net/hub/452492/file-2432061656-pdf/content/SF_handbook.pdf?t=1455293646229 [Accessed 6 Jan. 2019].
- Poultry Hub. (2019). Chicken egg (layer) industry - Poultry Hub. [online] Available at: <http://www.poultryhub.org/production/industry-structure-and-organisations/egg-industry/> [Accessed 7 Jan. 2019].
- VideoPad Video Editor, <https://videopad-video-editor.en.softonic.com/>
- Avidemux, <https://avidemux.en.softonic.com/>
- OpenShot Video Editor, <https://www.openshot.org/>

