

Ethics,
Eggs and
Sustainable
FarmingSubject Area:
Digital Technologies

Lesson Overview

In this module, students will explore egg production in Australia with a focus on ethical practice surrounding egg farming and production, consumer perceptions around purchasing eggs, the laws and regulations surrounding this industry, the level of sustainability in this industry, and possibilities for increased sustainability.

Students will use an inquiry-based approach to research the information throughout this unit and a range of digital technologies to present their information to an audience. 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.

This module is designed for an eight week period, with several short activities and opportunities for students to complete activities in their own time. Teachers should be aware that some sections may take longer than others and use their discretion when organising their lesson timings.

Lesson Intentions

Students will understand:

- The importance and complexity of the Australian egg industry
- Considerations around raising hens
- Sustainability and future planning in the egg industry
- The Solution Fluency model and its use in Design and Digital Technology
- The considerations of different groups of consumers
- Ethical considerations around egg production from a range of sources
- How to use technology to present succinct, appropriate and well-organised information to an audience

Teachers Notes

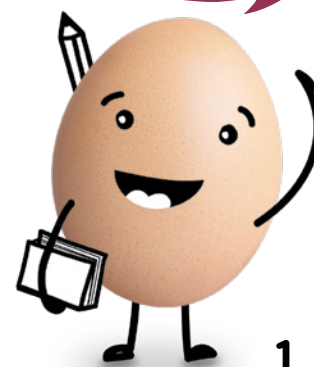
Resources and Materials

- Australian Eggs website:
www.australianeggs.com.au
- Appropriate electronic devices for research such as laptops or iPads
- Activity sheets (printed, enlarged to A3)
<https://www.australianeggs.org.au/education/secondary/ethics-eggs-sustainable-farming/>
- Sticky notes
- Felt tip pens, pencils
- Access to consumers and farmers
- 3 x egg packaging (cartons), one from each production system, with prices attached.
- Supplementary Interactive Whiteboard resources

This unit is supported by interactive whiteboard resources available at:

<https://www.australianeggs.org.au/education/secondary/ethics-eggs-sustainable-farming/>.

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 of 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

Stage 5 Curriculum links

Design Technologies:

- **ACTDEK044** Investigate and make judgments on the ethical and sustainable production and marketing of food and fibre
- **ACTDEK040** Critically analyse factors, including social, ethical and sustainability considerations, that impact on designed solutions for global preferred futures and the complex design and production processes involved

Digital Technologies:

- **ACTDIP038** Define and decompose real-world problems precisely, taking into account functional and non-functional requirements and including interviewing stakeholders to identify needs
- **ACTDIP042** Evaluate critically how student solutions and existing information systems and policies, take account of future risks and sustainability and provide opportunities for innovation and enterprise
- **ACTDIP044** Plan and manage projects using an iterative and collaborative approach, identifying risks and considering safety and sustainability

Health and Physical Education:

- **ACPPS092** Propose, practise and evaluate responses in situations where external influences may impact on their ability to make healthy and safe choices
- **ACPPS093** Investigate how empathy and ethical decision making contribute to respectful relationships
- **ACPPS095** Critically analyse and apply health information from a range of sources to health decisions and situations
- **ACPPS096** Plan, implement and critique strategies to enhance health, safety and wellbeing of their communities
- **ACPPS097** Plan and evaluate new and creative interventions that promote their own and others' connection to community and natural and built environments

Cross curriculum priorities

- Sustainability

Aims & Objectives

- Literacy
- Numeracy
- Critical and Creative Thinking
- Personal and Social Capability
- Ethical Understanding



Stage 1: DEFINE

Introduction

1. Explain to the students that they will be embarking on a project to learn how to solve a real-life problem using a method called Solution Fluency.
2. Give the students the following definition of Solution Fluency and display the Solution Fluency graphic on the interactive whiteboard (IWB):

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 that in groups, they will be using a Solution Fluency approach to find a solution.

'Create an 8-10 minute documentary detailing how egg production occurs in Australia, publishing the final product on TeacherTube. The purpose of the documentary will be for Primary teachers to use as a tool in their classrooms when educating Year 5 & 6 students about the egg industry. Your documentary should cover the practical aspects of egg production as well as environmental, economic, and ethical considerations.'

Activity 1

1. 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.
2. Encourage students to examine the above task in pairs and answer the following questions:
 - What do we already know to help us with this task?
 - What will we need to find out and how will this be done?
 - What skills will we need to employ throughout this task and how will we acquire them?
3. Plenary. Each pair is to share their thoughts on what will need to be researched to complete the task. Create a class list to add to with each pair's ideas. Some ideas might include: researching documentary styles, researching movie maker software, understanding the audience, interviewing appropriate stakeholders, finding out more about the Australian egg industry compared to the US egg industry (for example), finding out more about how Australian egg farms are managed, etc.

Activity 2

1. Explain to the students that they will be exploring the meaning of Ethics in this section.
2. Display the Ethics graphic on the IWB and ask students: 'What does it mean if something is ethical?' Collect responses to this question and record any key words that arise, e.g. values, consequences, etc.
3. Display the edited image of a popular magazine cover and discuss the reasons for this being an unethical action by the magazine production team. What might be the consequences of their action?
4. Present the following situation to the class for discussion: It is your sister's birthday tomorrow and you have forgotten to get her a present! You know that your parents have an emergency money jar and you take \$50 from it to buy a gift without telling them. The gift costs \$45 and with the change you buy yourself a snack. You do not have the money to replace it yet, but plan to as soon as possible.
5. Break students into pairs and encourage them to complete the **Exploring Ethics Activity Sheet** to gain a deeper understanding of how ethics can affect actions and consequences.
6. Plenary. Give each pair an opportunity to share their thoughts on the answers to the questions.

Teacher tip:
Keep the language and approach to this situation positive and encourage students to focus on the process of evaluating their own values and empathising with others.

Stage 1: DEFINE

Activity 3

1. Display the three types of sustainability on the IWB. Discuss each with the class and record their ideas about the meaning of each. Below are some meanings to help you explain each:
 - **Social sustainability** is when we support individual people's and the community's health and wellbeing with our actions and ensure our world will continue for future generations.
 - **Environmental sustainability** is when we look for ways to support the continuation of our planet by developing and switching to renewable resources, finding ways to reduce pollution and reducing our energy use and recycling.
 - **Economic sustainability** is when we endeavor to make profits which do not negatively impact people or the environment. We can do this by supporting local businesses and recycling and reusing our resources.
2. Direct the students to the **Being Sustainable Activity Sheet** and encourage them to complete it either independently or with a partner.
3. Plenary. Give each pair the opportunity to share their ideas with the class. Create a class list of ways to be socially, economically and environmentally sustainable.

Activity 4

1. Revisit the lists students completed in Activity 1 of what we need to find out in order to complete the task.
2. Explain to students that in this session we will be concentrating on developing our knowledge of the egg industry in Australia. Display the pages for the three **Main Production Systems** on the IWB and discuss each with students. Divide class into groups of four students. These will be their groups for the entirety of the project.
3. Groups are now tasked with discovering more detail about the three main commercial production systems in the Australian egg industry. They can use appropriate electronic devices, such as laptops or iPads, and other resources, keeping notes in their workbooks and ensuring that they reference appropriately to create a working bibliography for their project.

Teacher tip:

If your school does not have a preferred way of referencing, show students how to use the Harvard (AGPS) referencing system commonly used by universities in Australia. A great place to start is to look up a well known university in your state and follow their suggested Harvard referencing guides, or alternatively you can see the many different approaches taken around the world using one of the following links:

<http://www.easybib.com/reference/guide/apa/book>,
<https://www.youtube.com/watch?v=CDGdqoCYAtw>,
<http://www.citethisforme.com/>

4. Bring the class back together and give groups the opportunity to share their learning about each production system and complete the Plus, Minus, Interesting notes sections on each of the Production System slides as a class.
5. As a class, complete the **Egg Production Cycle** on the IWB to describe each stage of egg production from farm to home. Check answers on the next slide.
6. Plenary. Open a discussion about any new or surprising information students have identified throughout the session.

Stage 1: DEFINE

Activity 5

1. Invite a discussion about documentaries. Ask students, what makes an effective documentary? Collect these ideas and keep for later reference.
2. Ask students to work in their groups and generate ideas about how to make a documentary. Is there anything they need to know before beginning the project? e.g. which movie maker software to choose?
3. In groups, encourage students to find an example of a well-organised and presented documentary online and take notes about its structure, information organisation, features, sound, images, and anything else that is relevant.
4. Plenary. Bring the class together and revisit the attributes of an effective documentary. Add to this list from student ideas.

Teacher tip:
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>

Stage 2: DISCOVER

Activity 1

1. Revisit the information students collected on the three main egg production systems in Australia.
2. Hand out the **Production System SWOT Analysis Activity Sheets** (each group will need three copies of this) and instruct groups to complete the analysis for each of the production systems. This will integrate the students' knowledge of egg production with their understanding of how other considerations such as economic, environmental and ethical, may affect the production process. Allow students access to the internet during this activity to enable them to continually add to their SWOT analysis and deeper understanding of the workings of the egg industry. Encourage students to explore the Meet Australian Egg Farmers page on the Australian Eggs website for more information (the page can be found here: <https://www.australianeggs.org.au/learn-about-egg-farming/meet-australian-egg-farmers>).
3. Bring the class back together and open a discussion about the ethics involved in food advertisements. Display the slide entitled **Ethical Advertising in Food** and discuss the displayed advert.
4. Encourage students to find examples of what they consider to be unethical food adverts.
5. Bring the class bring together and give each group the opportunity to present their advertisement and explain their reasoning.

Activity 2

1. Explain to students that to gain a deeper understanding about how consumers feel about the ethics of the egg industry, they will need to collect real information from real people. Solution Fluency is a human-centred approach to problem solving and therefore, if they can understand the user, they can harmonise their responses to the task with their needs.
2. In groups, instruct students to design a survey to distribute to consumers about their feelings surrounding the main production systems for eggs and shopping for eggs.

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.



Stage 2: DISCOVER

Activity 2 (continued)

3. Give groups the opportunity to distribute their surveys to consumers. This can be in the form of a field trip to a supermarket or using an online tool.
4. Groups collect responses to their surveys and record any trends in their results.
5. Bring the class together and discuss any trends or interesting information that has arisen from the surveys, for example any survey response bias that may have come up, e.g. participants consistently reporting that they always buy free range eggs, even if this is in contrast with their actual buying habits.

Activity 3

1. Explain to students that now that they have their survey answers they are able to better understand egg consumers, and therefore, are able to tailor their responses to the task to meet its needs more appropriately.
2. Hand out the **Empathy Map Activity Sheet** to each group and direct them to complete each section with what they know or have found out about the focus group, i.e. the consumer.
3. When Empathy Maps are completed, encourage groups to explore the packaging for the three main types of eggs and complete an analysis of them. Groups should think about each packaging option from the viewpoint of the consumer and record whether their observations and thoughts affirm the information from the surveys.
4. Hand out the **Egg Packaging Analysis Activity Sheet** to each group and encourage them to populate it with their observations of each packaging option.
5. Plenary. Bring the class back together and give each group the opportunity to share a surprising piece of information from their analysis.

Activity 4

1. Display the slide **Animal Welfare in the Egg Industry** on the IWB and collect students thoughts and ideas around this topic. Challenge them to think about what farmers might need to be aware of, how consumer opinions affect farmer and supermarket practices and their knowledge of any legal requirements for keeping animals.
2. Display the slide **Animal Welfare in the Egg Industry**. This has names and links for some relevant legislation and research about raising hens and egg production in Australia. Give each group one link to research online or challenge them to find their own material based on the group's needs. Groups take notes of relevant information, remembering to reference their sources as described in Activity 4 of Define.
3. Plenary. Bring the class back together and give each group the opportunity to share their research. Create a class list or document of relevant information to refer to throughout this project.

Activity 5

1. Explain to students that in order to gain a deeper understanding of the egg industry they will need to understand the experiences of farmers from each of the main production systems. Show the class the embedded video or visit the Vimeo link for the same video if your school blocks YouTube links. (<https://vimeo.com/306709789>)
2. Discuss how Rachel Wilson produces eggs. What kind of production system does she use? What technology is involved in her daily experience? Discuss the importance of the community of Munster supporting Rachel's farm.
3. Challenge groups to find documentation of other Australian Egg farmers and their experiences in egg production. A good place to start is the Australian Eggs website at the following link: <https://www.australianeggs.org.au/learn-about-egg-farming/meet-australian-egg-farmers/>. Each group should make notes on a farmer from each of the three main production systems; cage, barn-laid and free range, remembering to reference as described in Activity 4 of Define.
4. Plenary. Bring the class back together and give each group the opportunity to share some interesting information they have learnt from their research. Revisit previous thoughts on each of the main production systems (slides 9-11). Did the research contradict the students' original thoughts? Is there any new information we can add?

Activity 6

1. Review notes on the main production systems and the experiences of egg farmers around Australia. Hand out the **Supporting Sustainability Activity Sheet** and encourage groups to make notes on how each of the three egg production systems support the three pillars of sustainability (social, environmental and economic).
2. Plenary. Each group is to visit another group in the classroom and employ the 'Give One, Get One' method to assess and add to their work. Groups should volunteer an idea from each box on their Supporting Sustainability table for another group to add to theirs, before receiving an idea in the same manner.
3. As an extension task, challenge groups to think of ways each production system could be more sustainable in the future.



Stage 2: DISCOVER

Activity 7

1. Remind students that their documentaries will be aimed towards Primary students and so they need to demonstrate an understanding of their audience and what they might want from a learning resource.
2. Display the slide **Documentaries for Primary** on the IWB and gather students' ideas on appropriate features for a primary school-based documentary.
3. Encourage groups to go and research other programs for primary aged students and make notes on their features, remembering to reference as described in Activity 4 in Define. This can be done in students' own time or as part of the lesson.
4. Plenary. Bring the class back together and give each group the opportunity to share the features they found. Add to the ideas on the slide to make a class criteria for the documentaries.

Stage 3: DREAM

Activity 1

1. Revisit the task, explaining that the Dream stage is centred around planning the documentary:

'Create an 8-10 minute documentary detailing how egg production occurs in Australia, publishing the final product on TeacherTube. The purpose of the documentary will be for Primary teachers to use in as a tool in their classrooms when educating Year 5 & 6 students about the egg industry. Your documentary should cover the practical aspects of egg production as well as environmental, economic, and ethical considerations.'

2. Discuss with the class how they propose to create a documentary. It may be helpful here to revisit the information in Activity 5 of the Define section.
3. Explain that groups now need to organise their information into a documentary style. They should think about the order in which the information should be presented, where any interviews should be placed, how text and images should be used, whether they will have background music and how to source this legally, and which roles each group member will adopt. Remind students that their documentary should focus on other considerations in egg production such as environmental, economic and ethical, as the central investigation, rather than purely a reiteration of the practicalities behind producing eggs.
4. Hand out the **Planning a Documentary Activity Sheet** to aid students in organising their information (groups may need multiple copies of this resource).

Teacher tip:
Students should organise all of their references thus far into an acknowledgements section to be displayed at the end of their documentary.

Teacher tip:
Some groups may choose to use their own methods to do this and some may need to use the activity sheet for more guidance in this area. Use your discretion and knowledge of students' abilities in each group when approving their method of planning.

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 arena.
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 will design their own consent forms to use with their interviewees.
4. Groups then research other ethical considerations and legal responsibilities when publishing material online, making notes and referencing their sources as described in Activity 4 of Define.
5. Plenary. Bring the class back together and create a class list of legal responsibilities and ethical considerations around publishing content online.

Stage 3: DREAM

Activity 3

1. Show the class the **Assessment Rubric** for this project available at: <https://www.australianeggs.org.au/education/secondary/ethics-eggs-sustainable-farming/> and go through each section with them. You may wish to print this document for each group.
2. Explain that groups can use this document to self-assess their progress and content throughout their project and you (the teacher) will remind them regularly to assess each aspect of their documentary to ensure they can reach their fullest potential.

Teacher tip:
You may find while explaining the rubric that there are gaps in student knowledge. This is a good time to fill those gaps or refer the student to previous lesson or resources to develop their understanding.

Stage 4: DESIGN

Teacher tip:

The Design stage is centred around students creating their documentary filming the content and cutting it together using a movie app or website so the direct instructional teaching component should be minimal. However, this is a good opportunity to identify teachable moments to improve students' understanding of the task and/or content and to formatively assess progress.

This stage is also a good time to organise class trips to local markets, supermarkets, farms, and cafés or restaurants to collect data, information and opinions from a range of stakeholders in the egg industry. This ensures that all groups get the same opportunities to gather their content and can use their consent forms and surveys in real time if needed.

Activity 1

1. Groups work together to gather the content, film their content and cut it together using a chosen app or website.
2. Plenary. Encourage the groups to rehearse their documentary to get an idea of its length and consistently refer to the assessment rubric to ensure they are covering all aspects of creating an effective documentary.

Teacher tip:
Ensure students are given adequate time to complete this step.

Activity 2

1. Revisit the surveys each group made to gather data from the consumers. Explain that they will need to design a survey to collect feedback about their documentary from primary-aged children and their teachers. Children's surveys should be short and with language easily accessible for children from Years 3 to 6. Both surveys should aim to gather information on the content of the documentary, the accessibility, whether it was enjoyable and exciting, the digital features of the documentary and whether it focused on the ethics and sustainability in the egg industry as advertised.
2. Groups design a short survey for primary aged children and a short survey for primary teachers to collect feedback about their documentary.
3. Plenary. Bring the class back together and give each group the opportunity to share the questions on their surveys. Evaluate each question as being appropriate and meaningful for either primary aged children or primary teachers.

Stage 5: DELIVER

Activity 1

1. Groups are given an opportunity to present their documentary to the class.
2. Each group collects feedback in the form of constructive criticism related to the class criteria on the **Peer Assessment Feedback Activity Sheet**.
3. Groups should make any relevant changes to their documentary based on the feedback provided.
4. 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 any resulting changes. They should make an effort to highlight the result of those changes on their documentary and how it now meets the criteria more effectively.

Activity 2

1. Groups should have the opportunity to present their documentary to a class or sample of primary-aged children and gather feedback as above. If no primary class is available groups may present to their peers or teachers.
2. **All documentaries must be approved by a teacher as being appropriate as an online resource before being published on TeacherTube or the school's website or social media channels.**
3. Groups publish their documentaries on TeacherTube or the school's website or social media channels.

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

Stage 6: DEBRIEF

Activity 1

1. Groups should gather and revisit their **Peer Feedback Sheets**, their survey responses and the assessment rubric.
2. Individually, group members write an evaluation of their project and how well it met the brief using the **Assessment Rubric** and the task as a guideline.
3. In groups, students should assess and agree on where their documentary fits on the **Assessment Rubric** and the reasons for this.
4. Teachers should retain copies of the students' evaluations and documentaries for a summative assessment of this project.

Further Reading and References

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