



AN EDUCATIONAL UNIT FOR JUNIOR PRIMARY SCHOOLS



A year on a farm

YEAR 1

Design and Technologies, Mathematics,
Geography and Science

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Liz Grant

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The material in this Unit of Work is made available for the purpose of providing access to general information about food and fibre production and primary industries in Australia.



As content of the websites used in this unit is updated or moved, hyperlinks may not always function.

Introduction

Rationale

This resource material aims to help teachers and students in primary schools investigate and understand more about primary industries in Australia.

The objectives of the educational resources are to:

- Support Primary Industries Education Foundation Australia and its members in expanding awareness about primary industries in Australia by engaging and informing teachers and students about the role and importance of primary industries in the Australian economy, environment and wider community.
- Provide resources which help build leadership skills amongst teachers and students in communicating about food and fibre production and primary industries in Australia.
- Develop educational resources that can be used across Australia to provide encouragement, information and practical teaching advice that will support efforts to teach about food and fibre production and the primary industries sector.
- Educate school students on ways food and animals are raised and grown.
- Demonstrate to students that everyone can consider careers in primary industries and along the supply chain of food and fibre products.
- Assist school students to spread this message to their families and the broader community.
- Develop engaging learning programs using an inquiry process aligned with the Australian Curriculum.
- Develop in school communities, an integrated primary industries education program that emphasises the relationship between food and fibre industries, individuals, communities, the environment and our economy.

These educational resources are an effort to provide practical support to teachers and students learning about food and fibre production and primary industries in schools.

An integrated primary industries education program that emphasises the relationship between food and fibre industries, individuals, communities, the environment and our economy.

About the approach

The approach used, is the inquiry approach through five phases: Engage, Explore, Explain, Elaborate and Evaluate.

Several key principles underpin the theoretical and practical application to this unit.

In providing an *integrated framework for inquiry*, complemented by rich explorations of texts that are, in turn, supported by an emphasis on undertaking a challenge or task, the unit requires students to:

- Search for information using both digital and non-digital means
- Use research techniques and strategies
- Use thinking and analysis techniques
- Present findings to a real audience, and
- Reflect both on the product created and the process undertaken.

Rather than seeing knowledge as something that *is taught* the emphasis in this unit is on knowledge and understanding that *is learned*.

The unit involves students in:

- Working from a basis of their prior knowledge and experience
- Seeing a real task or purpose for their learning
- Being directly involved in gathering information firsthand
- Constructing their knowledge in different ways
- Presenting their learning to a real audience
- Reflecting on their learning.

The approach used, is the inquiry approach through five phases: **Engage, Explore, Explain, Elaborate** and **Evaluate**. The phases of the model are based on the 5Es instructional model (Bybee, 1997). This unit of work containing student activities assists students to raise questions, gather and process data, make conclusions and take action. These phases are:

- **Engage:** The 'Engage' phase begins with lessons that mentally engage students with an activity or question. It captures their interest, provides an opportunity for them to express what they know about the concept or skill being developed, and helps them to make connections between what they know and the new ideas.
- **Explore:** The 'Explore' phase includes activities in which they can explore the concept or skill. They grapple with the problem or phenomenon and describe it in their own words. This phase allows students to acquire a common set of experiences that they can use to help each other make sense of the new concept or skill.
- **Explain:** The 'Explain' phase enables students to develop explanations for the phenomenon they have experienced. The significant aspect of this phase is that explanation follows experience.
- **Elaborate:** The 'Elaborate' phase provides opportunities for students to apply what they have learned to new situations and so develop a deeper understanding of the concept or greater use of the skill. It is important for students to discuss and compare their ideas with each other during this phase.
- **Evaluate:** The 'Evaluate' phase provides an opportunity for students to review and reflect on their own learning and new understanding and skills. It is also when students provide evidence for changes to their understanding, beliefs and skills.

Source: Primary Connections <http://www.primaryconnections.org.au/about/teaching>

The student-centred interactive teaching and learning approaches described in this unit make extensive use of the students' own questions and investigations. It is based on the idea that learning is a process of personal construction and reconstruction of ideas, rather than the absorption of a hierarchy of taught facts and concepts.

In practical terms, this means that teachers are not seeking to instill in students a selection of understandings, but are teaching and supporting them to experience and use creative ways of thinking to develop a greater understanding of how food and fibres are produced around them.

Resource description

This is a unit with five inquiry teaching sequences about exploring tasks that must be undertaken on a farm all year round, where animals are raised, crops are grown and where different foods we eat and fibres we use are produced.

This unit encourages students to use different measurements of time whilst exploring the tasks undertaken on farms.

Students explore things that farmers do to care for the animals and crops that are grown, raised and processed for food and fibres and they explore how long it may take to do some tasks.

Students are invited to create a calendar about what happens on a farm that includes how long it takes how long it takes to do some tasks on a farm.

As the unit progresses, the emphasis shifts to exploring products that can be designed and produced from plants and animals, for example food products, paper and wood products, fabrics and yarns and fertilisers.

Having explored what happens on the farm where foods and/or fibres are grown students then investigate what farm products they eat, wear or use each day.

Year level 1

Curriculum focus

In this unit, students:

- Explore farm life through stories.
- Investigate tasks that must be undertaken on a farm all year round, where animals are raised, crops are grown and where different foods we eat and fibres we use are produced.
- Use different measurements of time whilst exploring the tasks undertaken on farms and how long they might take to do.
- Explore things that farm families do to care for the animals and crops that are grown, raised and processed for food and fibres.
- Create a calendar that uses the months of the year or seasons to describe what happens on a farm that includes how long it takes how long it takes to do some tasks on a farm.
- Explore products that can be designed and produced from plants and animals, for example food products, paper and wood products and fabrics and yarns.
- Reflect and evaluate the ways farmers undertake tasks on farms all year round, where animals are raised, crops are grown and where different foods we eat and fibres we use are produced.

Based on Australian Curriculum, Assessment and Reporting Authority (ACARA) materials downloaded from the Australian Curriculum website in February 2015. ACARA does not endorse any changes that have been made to the Australian Curriculum.

Investigate tasks that must be undertaken on a farm all year round, where animals are raised, crops are grown and where different foods we eat and fibres we use are produced.

Australian Curriculum content descriptions

Design and Technologies

Strand: Design and Technologies knowledge and understanding

Explore how plants and animals are grown for food, clothing and shelter and how food is selected and prepared for healthy eating [ACTDEK003](#)

Mathematics

Strand: Measurement and Geometry: Using units of measurement

Describe duration using months, weeks, days and hours [ACMMG021](#)

Strand: Statistics and Probability: Data representation and interpretation

Choose simple questions and gather responses [ACMSP262](#)

Geography

Strand: Geographical Knowledge and Understanding

The natural, managed and constructed features of places, their location, how they change and how they can be cared for [ACHGK005](#)

Science

Strand: Science Understanding: Biological sciences

Living things have basic needs, including food and water [ACSSU002](#)

Cross Curriculum Priorities

Sustainability

OI.2: All life forms, including human life, are connected through ecosystems on which they depend for their wellbeing and survival.

OI.7: Actions for a more sustainable future reflect values of care, respect and responsibility, and require us to explore and understand environments.

Source: Australian Curriculum, Assessment and Reporting Authority (ACARA), downloaded from the Australian Curriculum website in February 2015.

Implementing the unit and activities in the classroom

Using the unit

The unit can be used in a number of ways. It will be of most benefit to teachers who wish to implement a sustained sequence of activities following the inquiry stages identified in the **About the approach** section of this unit and content descriptions in Year 1 in Design and Technologies, Mathematics, Geography and Science as stated in the Australian Curriculum.

Selecting activities

At each stage several activities are suggested from which you are encouraged to select the most appropriate for your purposes. Not all activities in each stage of the unit need to be used. Alternatively, you may add to or complement the suggested activities with ideas of your own.

It is suggested that teachers create a hyperlinked unit. Organise the digital resources for your class's use on a website or wiki or provide them on your interactive whiteboard.

Resourcing the unit

The resources suggested are on the whole, general rather than specific. Schools and the contexts in which they exist vary widely as does the availability of some resources – particularly in remote areas. There is a strong emphasis in the unit on gathering information and data; research and observations also feature strongly as these methods develop important skills and ensure that the exploration of the topics are grounded in a relevant context.

Some YouTube and online videos in addition to Internet based resources are suggested in the unit. You will need to investigate what is available in your school.

Adapting the unit

The unit is targeted at Year 1 students. This is a suggested age range only and teachers are encouraged to modify activities to suit the needs of the students with whom they are working.

The unit's topics are based on content descriptions of the Australian Curriculum and on the key cross curriculum priority of sustainability. They embrace content that we believe is of relevance and significance to all students. We encourage you to explore ways in which the content can be adjusted to the context in which you are working.

Many of the activities contain the following icons offering a suggestion on how many students should be involved:



Suggested for individuals



Suggested for pairs or small groups



Suggested for larger groups or entire classes

Resource sheets are provided for some activities. Most are for photocopying and distribution to students. They are identified within units in bold italic: **Resource 1.1**

The resource sheets are designed to assist teachers to facilitate learning without having to access a range of other resources.

What about assessment?

Rather than being a task carried out at the end of the unit, assessment is viewed as integral to the entire unit sequence. Each activity should be regarded as a context for assessment of student learning.

When planning and implementing the unit of work make clear decisions on what you will focus on in assessing learning. The unit provides an opportunity for a range of skills and understandings to be observed. We encourage you to devise an assessment plan or assessment rubric that features areas to be assessed over subsequent lessons.

In planning for assessment, student learning in the following areas can be considered:

- Understandings about the topic
- Development of skills
- Exploration and clarification of values
- Use of language in relation to content
- Ability to use and critically analyse a range of texts
- Ability to analyse and solve problems
- Ability to interpret information, perceive its meaning and significance, and use it to complete real-world tasks
- Ability to work cooperatively with others
- Approach to learning (independence, confidence, participation and enthusiasm)

For this unit, the following understandings are provided to assist teachers in planning for assessment.

Assessment strategies

Each stage in the inquiry sequence provides information about student learning. There are, however, two stages in the unit that are central to assessment: the **Engage** stage and the **Evaluate** stage. Work that is undertaken in these stages can assist teachers to monitor growth and observe concrete examples of the way student ideas have been refined or have changed through the unit sequence. Work samples should be retained for this purpose.

The unit also contains a 'Student Task' which is well suited for assessment, as it is the summation of the work undertaken by the students in the unit of work.

Some questions and possible answers

Should I do all the activities?

At each stage of a unit, a number of activities are listed. You would not be expected to do them all. Instead, the unit is designed so that a selection of activities can be made at each stage. You should select the activities according to the needs and interests of your students and the time, relevance to the existing school curriculum and resources available to you.

While you are encouraged to follow the suggested inquiry sequence for each unit, it is quite possible to pick and choose from the range of activity ideas throughout the unit. It may also be used in conjunction with other programs you use.

How do these units fit into my weekly program?

Although the unit integrates a range of key subject areas, it is not designed to be a total program. It is assumed that regular routines that operate in your classroom will continue to run alongside your unit of work. For example, you may have regular times for use of the library, for maths, physical education etc. These things don't change – although student's writing topics or choice of topics to research in the library or in Information and Communication Technology classes may be influenced by this unit.

How long should the unit run?

This will of course depend on your particular circumstances but generally, a few weeks to a term are suggested.

I don't know much about food and fibre production myself – will I be able to teach it effectively?

Yes! The unit is designed in such a way that you, as the teacher are a co-learner, and you are therefore provided with teacher notes, plus readily available resources that are mainly web-based. Most importantly, you will find that you learn with the students and make discoveries with them.

Fast facts about Australian agriculture

National Farmers' Federation Farm Facts 2012

In 2011, there
were 157,000
farmers
in Australia.

The gross value
of Australian
farm production
in 2011–12 was
\$46.7 billion.

This page provides basic food and fibre production information that may be helpful when you interact with the school students.

- Agriculture plays a vital role in Australia, contributing to our social, economic and environmental sustainability.
- In 2011, there were 157,000 farmers in Australia. Around half of these were mixed crop and livestock farmers (22 percent), beef cattle farmers (20 percent) or dairy farmers (8 percent).

Sources: Australian Bureau of Statistics, 2010–11 Agricultural Census; Australian Bureau of Statistics, Australian Social Trends, Australian Farming and Farmers, December 2012, Catalogue No. 4102.0.

- These farmers own or manage Australia's 135,000 farm businesses – 99 percent of which are Australian owned.

Sources: Australian Bureau of Statistics, 2010–11 Agricultural Census; Australian Bureau of Statistics, Agricultural Land and Water Ownership, December 2010, Catalogue No. 7127.0.

- Each Australian farmer produces enough food to feed 600 people, 150 at home and 450 overseas. Australian farmers produce 93 percent of Australia's daily domestic food supply.

Sources: Keogh M, Australian Farm Institute, 2009, "Australia's response to world food security concerns", Address to the 1st National Farmers' Federation Annual Congress – Prime Minister's Science, Engineering and Innovation Council (2010); Australia and Food Security in a Changing World. The Prime Minister's Science, Engineering and Innovation Council, Canberra, Australia.

- The average Australian farmer is male (72 percent), 53 years old (compared with 40 years old for people in other occupations), and a self-employed owner manager (56 percent).

Sources: Australian Bureau of Statistics, 2010–11 Agricultural Census; Australian Bureau of Statistics, Australian Social Trends, Australian Farming and Farmers, December 2012, Catalogue No. 4102.0.

- As of June 2012, there were 290,000 people employed in Australian agriculture. The complete agricultural supply chain, including the affiliated food and fibre industries, provide over 1.6 million jobs to the Australian economy.

Sources: Australian Bureau of Agricultural & Resource Economics and Sciences (ABARES), Australian Commodity Statistics, 2012; Australia's Farm Dependent Economy: Analysis of the role of Agriculture in the Australian Economy. Modelling undertaken by Econtech.

- The agricultural sector, at farm-gate, contributes 2.4 percent to Australia's total gross domestic product. The gross value of Australian farm production in 2011–12 was \$46.7 billion.

Sources: Australian Bureau of Statistics, Value of Agricultural Commodities Produced, 2011–12, Catalogue No. 7503.0; Australian Bureau of Statistics, 2010–11, Australian System of National Accounts, Catalogue No. 5204.0; ABARES, Australian Commodity Statistics, 2012.

- Australian farmers are environmental stewards, owning, managing and caring for 59 percent of Australia's land mass.

Sources: Australian Government Department of Agriculture, Fisheries and Forestry, At a Glance, 2012.

- Farmers are at the frontline of delivering environmental outcomes on behalf of the Australian community, with 94 percent of Australian farmers actively undertaking natural resource management.

Source: Australian Bureau of Statistics, Natural Resource Management on Australian Farms 2006–07.

- Australia's primary industries have led the nation in reducing greenhouse gas emissions: a massive 40 percent reduction between 1990 and 2006.

Source: Australian Government Department of Climate Change, National Inventory by Economic Sector 2006.

Source: National Farmers' Federation Farm Facts 2012 at <http://www.nff.org.au/farm-facts.html>

Meat and Livestock Industry

- Australia's national cattle herd stands at 28.5 million head with the beef industry accounting for 57 percent of all farms with agricultural activity.
- Australia produced around 2.2 million tonnes of beef and veal in 2012–13 directly contributing to 1 percent of Australia's gross domestic product.
- Australia's national sheep flock is 74.7 million head with the sheep industry accounting for 32 percent of all farms with agricultural activity.
- Australia produces approximately 6 percent of the world's lamb and mutton supply and in 2012–13 exported 51 percent of all lamb and 96 percent of all mutton produced.
- Australia's beef and lamb industry employs approximately 200,000 workers across farm, processing and retail.
- Australian cattle and sheep farmers are the custodians of almost half of Australia's land.
- Australia's beef and lamb industry is committed to ensuring a sustainable food supply for future generations with ongoing research and development projects relating to water, soil, biodiversity, animal welfare, energy, emissions and more.

Source: Meat and Livestock Australia <http://mla.com.au>

Fishing and Aquaculture Industry

Australia's marine domain, our Exclusive Economic Zone, is one of the largest in the world, covering around 10 million square kilometres. This is larger than mainland Australia (7.69 million square kilometres). Despite the size of this zone Australia ranks 46th in the world for seafood production.

Australia has progressively adopted a more ecosystem-based approach to fisheries management which looks at the effect of fishing practices not just on the target species, but also on the environment and other related species. Fisheries managers monitor both stock and fishing levels as well as a range of other environmental factors to ensure the amount of seafood harvested every year does not deplete stocks. In addition, government observers travel regularly on fishing boats to ensure compliance to quotas, bycatch limits and other regulations.

Source: Fisheries Research and Development Corporation, 2013 <http://frdc.com.au/>

During 2011–12 in Australia:

- There were 6,991 people directly employed in the commercial fishing, hunting and trapping sector, and 3,642 in aquaculture enterprises.
- The sector comprises approximately 120 wild catch fisheries and 70 aquaculture species.
- The gross value of Australian commercial seafood and products (e.g. pearls) was valued at \$2.3 billion, an increase of 3 percent on the previous year.
- Australian imports of fisheries products increased by 5 percent.
- The value of production for the wild-catch sector declined by 1 percent to \$1.3 billion and production volume decreased by 4 percent to 157,505 tonnes. While the gross value of aquaculture production rose by 10 percent (\$100 million) to \$1.1 billion.
- The largest contributor to Australian aquaculture production in 2011–12 was salmonids, which make up 52 percent of the total aquaculture production volume and 49 percent of the value.
- Tasmania accounted for the largest share of gross value of production (30 percent), followed by South Australia (19 percent) and Western Australia (17 percent). Commonwealth fisheries accounted for 13 percent of the gross value of production.

Source: ABARES, 2013 http://data.daff.gov.au/data/warehouse/9aam/afstad9aamd003/2012/AustFishStats_2012_v1.0.0.pdf



Australia's marine domain covers around 10 million square kilometres.

Cotton Industry

Australia's cotton growers produce yields almost three times the world average.

40% less water is needed to grow one tonne of cotton lint compared to 2003.

- Every year cotton farmers make an important social and economic contribution to the nation creating jobs for 8,000 people (in Northern New South Wales and Southern Queensland alone), support for more than 4,000 businesses and over \$2 billion for the national economy in export earnings.

Sources: *Cotton Australia Pocket Guide to Cotton*, Judith Stubbs and Associates Report 2011.

- In 2013, there were 1,181 cotton farms. 63 percent were in New South Wales and 37 percent were in Queensland. Of those farms cotton makes up 17 percent of land area on farm.

Source: *Cotton Annual 2014*.

- Australia's cotton growers produce enough cotton to provide jeans, socks, underwear and a shirt for 450 million people. The overall yield in 2012 was 10.37 bales per hectare – the first time in history that average yields have exceeded 10 bales per hectare. Australia's cotton growers produce yields almost three times the world average.

Sources: *Cotton Australia tables (compilation of industry sources)*, ABARES Crop Report, December 2012, *Pocket Guide to Cotton 2014*.

- The average Australian cotton farmer is 39 years old, has a family owned and operated farm, employs on average six or more people, grows other crops like sorghum, soybeans, wheat and canola, has 496 hectares of cotton and is not only a farmer but also a builder, mechanic meteorologist, agronomist, conservationist, scientist and marketer.

Sources: *Pocket Guide to Cotton 2014*, *Monsanto audited numbers 20.12.13*, *2013 Cotton Practices Grower Survey*, *Cotton Research and Development Corporation*.

- The Australian cotton crop was worth almost \$2.3 billion at the farm gate.

Source: *Cotton Australia tables (compilation of industry sources)*, *Cotton Compass*.

- The Australian cotton industry has achieved a 40 percent increase in water productivity over the last decade i.e. 40 percent less water is now needed to grow one tonne of cotton lint, compared to 2003.

Source: *The Australian Cotton Water Story 2011*.

- The ratio of dryland cotton (rain grown) to irrigated cotton varies depending on the market and conditions. Of the 2011–12 crop 5 percent was dryland and 95 percent irrigated. Favourable grain and sorghum prices meant many dryland farmers opted not to plant cotton at that time.

Sources: *Cotton Australia tables (compilation of industry sources)*, ABARES Crop Report December 2012.


- Australian cotton growers have reduced their insecticide use by 95 percent over the past 15 years. Source: *Monsanto Audited numbers 20.12.2013*.

- Cotton growers are good environmental stewards, owning and caring for native vegetation equivalent to 40 percent of the area of their cotton farms, on average.

Source: *2011 Cotton Grower Survey (Cotton Research and Development Corporation and Cotton Catchment Communities Cooperative Research Centre)*.

Source: Cotton Australia <http://www.cottonaustralia.com.au>

Pork Industry



Australia's pig herd is one of the cleanest in the world.

- Australia is the first nation in the world to introduce the voluntary phase-out of gestation stalls.
- Pork accounts for approximately 0.4 percent of the national greenhouse gas emissions – significantly lower than other agricultural sectors, including beef at 11.2 percent, sheep at 3.4 percent, and cattle at 2.7 percent.

Source: Garnaut, R 2008, *The Garnaut climate change review – final report*, available at: <http://www.garnautreview.org.au/index.htm>

- Whether housed indoors or outdoors, a pig spends more time resting than any other domestic animal.
- Australia's pig herd health is one of the cleanest in the world, free from many detrimental diseases found in most other pig producing countries
- The feed component (mainly grains such as wheat, barley and sorghum) makes up about 60 percent of the total cost of producing pork.
- Pigs have a very wide angle of vision (310 degrees) and are therefore easily distracted.
- On average, a sow will produce 10–12 piglets per litter.
- The average growth rate of Australian pigs is around 600–650 grams a day from birth to sale.
- Pigs have colour vision but they can't focus both eyes on the same spot.
- Pigs are unable to perspire and they lose heat through their mouths. Their ideal growing temperature is 20–22°C.

Source: Australian Pork Limited <http://www.australianpork.com.au>

Forestry Industry

Australia has 125 million hectares of forest, equivalent to 16% of its land area.

Forests protect soil and water resources as well as storing carbon.

- Forestry plays a vital role in Australia, contributing to our social, economic and environmental sustainability.
- Forests are also the foundation for a broad range of cultural and spiritual experiences for diverse groups of people. They are a major tourist attraction for Australian and overseas visitors, providing for a vast array of recreational and educational activities.
- In 2010–11, the total turnover of Australia's forest product industries was more than \$24 billion.
- Australia has 125 million hectares of forest, equivalent to 16 percent of Australia's land area. Australia has about 3 percent of the world's forest area, and the seventh largest reported forest area of any country worldwide.
- Australia's 123 million hectares of native forests are dominated by eucalypt forests and acacia forests.
- 32 percent of all Australia's native forests (private and public land) are protected for biodiversity conservation. With 73 percent of Australia's identified old growth forests in formal or informal nature conservation reserves.
- 9 percent (36.6 million hectares) of the native forests were available and suitable for commercial wood production in 2010–11 comprising 7.5 million hectares of multiple-use public forests and 29.1 million hectares of leasehold and private forests.
- Forests protect soil and water resources and are increasingly being recognised for their carbon storage and sequestration capability. The total carbon stored in forests, wood and wood products and paper products was in the order of 400 million tonnes in 2010.
- Australia's native and plantation forests provide the majority of the timber and a significant proportion of the paper products used by Australians.
- On average, each year, every Australian consumes the equivalent of about 1 cubic metre of harvested log in the form of timber products, including timber for home building, joinery and furniture and paper products.
- Australia's forest management is among the best in the world in terms of conservation reserves and codes of practice for production forests.
- Australia has two forestry certification schemes that enable users of wood and wooden products to know the source of the wood.
- The sector directly employs 73,267 people in the forest and wood products industry in Australia (2011). This includes full and part time employees with 1.5 percent of all employees being Indigenous.

Sources: <http://www.agriculture.gov.au/forestry>
<http://au.fsc.org/>
<http://www.forestrystandard.org.au/>
<http://www.naturallybetter.com.au/>
<http://www.forestlearning.edu.au/>



Step 1: Engage with the topic

Getting started

Purpose

To provide students with opportunities to:

- gather information about student's prior knowledge about farms
- measure time
- predict how long it takes to do things
- read the time
- learn about 'when' questions
- learn about how long it takes beetroot and coriander to grow
- understand that living things have basic needs
- develop skills in making connections between ideas
- help set directions for an investigation.

Farming all year round



Ask the students what they know about farms and the tasks that must be done on farms all year round. **LIST** these.



CONSIDER different types of farms, i.e. small mixed farms, pig farms, cotton farms, fish farms, oyster farms, tree farms, cattle farms, sheep farms, vineyards etc.



Using **Resource 1.1** ask students to **MATCH** the words with the different photos of farms and **RECORD** their answer in the space provided under each photo.



Attach the picture to a solid surface and **DISCUSS** the tasks being undertaken, the possible time of the day, week, month or season...OR... Cover with a separate sheet of paper that has been cut into separate jigsaw-type pieces with each piece attached with Blu-Tack.



Slowly remove each piece to reveal portions of the farm picture asking the students what they **THINK** the image is about, when it might be taking place, what season it might be.

Measuring time



Use the pictures in **Resource 1.2** that depict a selection of things that can help us measure time.

Go **SHOPPING** for things in the classroom and around the school that help us organise our hours, days, weeks, months and year, for example: clocks, diaries, calendars.



Introduce students to a clock as an item that can help us measure time. Ask students who can **READ** the time to **SHARE** the time that the classroom clock is showing.



READ the time using **Resource 1.3** titled 'What's the time?' to introduce and **EXPLORE** different types of things that happen on farms. Start with the description at midnight and proceed to 1 AM through to 11 PM.



TALK about how long things take. Ask students questions like:

- How long does it take to do the chores at your place?
- How long does it take to have morning tea at your place?
- How long does it take to eat lunch at your place?
- How long does it take to arrive home from school?
- How long does it take to have your afternoon snack?
- How long does it take for you to finish your homework?
- How long does it take for you to eat dinner?
- How long does it take for you to get ready for bed?



Step 1: Engage with the topic



After reading the storyline in 'What's the time?' ask students to **DRAW** the farm activity they like best and to **RECORD** the time it happens on a farm. Ask students to **PREDICT** how long they think it might take to undertake that particular activity on the farm. For example:

- How long do you think it might take to round up sheep on a quad bike? Minutes, hours, days or months?
- How long do you think it might take to bring cows in for milking using sheep dogs? Minutes, hours, days or months?
- How long do you think it might take for a tractor to harvest a crop? Minutes, hours, days or months?

Ask if the students would like to **CHANGE** their suggestions.



TALK with the students about how the answers to the questions above all depend on how many sheep there are to round up, how many cows there are to bring in and how large the paddock is that is growing the wheat.

EXPLAIN to the class that in this unit they will be investigating how long it takes to grow some things farms grow.

Introduce students to a clock as an item that can help us measure time.

Using the days of the week and questions to gather responses about the days of the week and how long things might take

Producing quality food and fibre depends a lot on knowing what to do and when. Ask any farmer and he or she will tell you that the questions most commonly asked are not about *how*. They are about *when*.



TALK with the students about 'when' questions. **BRAINSTORM** some that might be asked on farms. For example:

Is it time to shear the sheep? When shall I sow the crop? When shall I sell the cows? What's the best time to prune my vines? Should I cut down those raspberry canes now? Can I plant out those cotton seeds yet? When shall I milk the cows? When will it rain? When are lambs born? Is it time to harvest? Is it time to sow? Is it time to feed the fish? What seasons do the flowers on the fruit trees bloom?



EXPLAIN to the students that later in this unit they will be asked to **CHOOSE** which questions they will use to gather to answer an investigation about what happens on farms.

Use **Resource 1.4** and **SHARE** a story with the class about a young girl's visit to a farm. After reading the story once, **MODEL** a range of 'when' questions that can be asked about the story. For example:

- When did Sienna visit her Auntie's farm? (In the school holidays)
- When did she visit a farm with chickens and geese and collect eggs? (On Saturday)
- When did she pick vegetables and herbs? (On Friday)
- When did she visit a farm with 12 sheep and 4 baby lambs? (On Wednesday)
- When did she go horse riding on the farm next door? (On Monday)
- When did she arrive at her Auntie's farm? (On Thursday)



Step 1: Engage with the topic

Producing quality food and fibre depends a lot on knowing what to do and when.



ASK students to also make **PREDICTIONS** about how long it may have taken to do some of these things on the different farms featured in the story. For example:

- How long do you think it might have taken to pick spinach, parsley and chives from a garden?
- How long do you think it might take to collect 25 eggs?
- How long do you think it might take to make scrambled eggs?
- How long do you think it might take to enjoy a horse ride on a farm?
- How long do you think it might take to collect 18 eggs?
- How long do you think it might take to walk down a street and visit a farm with 12 sheep and 4 baby lambs?

Use an e-Book



READ the illustrated e-Book 'A Weekend on our Farm' by Jessica Clayton from Euchareena Public School. See: http://www.envirostories.com.au/es2012/es2012_CW_WeekonFarm/index.html

INTRODUCE the students to a farm, the different tasks that need to be undertaken on a farm, types of animals raised there, types of crops grown and what they produce.



VIEW the cover, read aloud the title and use clues from the covers and student's background knowledge to formulate predictions about how the story might unfold.



READ the story and engage students in **VISUALISING** the characters and their environs on the farm.



TALK about the meaning of 'the weekend'. **DISCUSS** the days that make up a 'weekend'.

Ask questions like:

- How many days are in a weekend?
- How many days are in a typical long weekend?
- How long did Lisa stay at her friend's farm?

Predicting how long it takes veggies and herbs to grow



Re-read page 4 of the Envirostory and ask students to **PREDICT** how long it might take the veggies in the garden on the farm to grow. **RECORD** the class predictions.



As a class use **Resource 1.5** and **READ** the 'Growing Advice' for beetroot and coriander. Ask students to **FIND** how long it takes before the beetroot and coriander can be harvested? (*Answer: Beetroot 10-12 weeks and coriander 18-24 days*)



Step 1: Engage with the topic

Just like my pet or garden



TALK about how all living things that are raised or grown on farms have basic needs that need to be met. (For example: Farm animals need food, water, shelter and farm crops need soil, water and sunlight)



PROVIDE students with photographs (from magazines etc) of farm animals and crops. The aim of this activity is for students to **CONSIDER** the similar needs of their pets and the farm animals in the photograph and the similar needs of their garden and the crops growing in the photograph.



ASK students questions like: How might your pet's needs be similar to those of farm animals? What might they all need to be healthy? What might they need every day of the week? How might your garden's needs be similar to those of crops grown on farms? What might they all need to be healthy? What might they need every day of the week?

Basic needs



TALK about horses. Find out if any class members have a pet horse or know of a farm with horses. Using **Resource 1.6** find out what horses on farms need throughout the year. Read about how long it takes to worm a horse, fill its water trough, brush it, put its blanket on and have the farrier trim its hoofs.



Ask students to choose simple questions to **FIND** out what time of the year horses on farms might need different things. **MODEL** the use of a timeline with students and using the timeline in **Resource 1.7** ask students to show what horses need from January through to December each year.

Setting the task

Calendars are useful tools that help us organise our days, months and year. **EXPLAIN** to the class that they will be working in pairs later in the unit to create their very own farm calendar.

Explain that each pair will **CREATE** a calendar that uses the months of the year or seasons to tell a story about how long it takes to do some tasks on a farm.

Calendars are useful tools that help us organise our days, months and year.



Step 2: Explore the topic

Explore farm life through stories

Purpose

To provide students with opportunities to develop their understanding of:

- calendars
- typical activities undertaken on a farm
- tasks that are undertaken on farms
- the language of time including days, weeks and months
- where our food comes from
- where our cotton and wool come from
- a focus for the forthcoming experiences in the 'Explain' stage of the inquiry.

Calendars



FIND out what students already know about calendars.

SHOW the cover of a calendar and invite predictions of what the 'book' might be about.



Ask students to **DISCUSS** ways calendars can be used to convey information.

For example, 'How are calendars used at school?' We use calendars to record the weather; to list each day's classroom activities; to remind us of school activities like sport events, library time etc.



TALK with the students about how important calendars are for farmers. **INTRODUCE** students to different calendars farmers use.



VIEW a cotton growing calendar.

Source: http://cottonaustralia.com.au/uploads/publications/POCKET_GUIDE_FINAL.pdf





Step 2: Explore the topic

Using the 'Cotton Farmer's Calendar' on the whiteboard or computer **ASK** students to:



- **FIND** the names of the four seasons.
- use the clues to **DESCRIBE** what might be happening on the cotton farm in spring, summer, autumn and winter.
- use the clues to **FIND** out how long it might take for the cotton to grow. Months? Weeks? Days? Hours?
- use the clues to **FIND** out how long it takes a cotton plant to emerge after the seed is planted (Look for information in Spring).
- use the clues to **FIND** out how long it might take to pick the crop.



DISCUSS how farmers use calendars to help them schedule things they need to do at different times of a day, week, month, season and year.

A story of one day



As a class **VIEW** a short video that features a School of the Air student sharing his 'day in my life' story.



Using the video, **INTRODUCE** students to the language of time used by the narrators and concepts about ways farmers raise their cattle and chooks.

See: *Kristopher: a student of the air from Cooliwanyah station*
<https://open.abc.net.au/projects/day-in-the-life-11bh6tz/contributions/kristopher-a-school-of-the-air-student-from-cooliwanyah-station-81re9hw>



ASK questions like:

- What time of the day does Kristopher start School of the Air lessons?
- How long does it take to travel from home to school?
- What days of the week does Kristopher attend school?
- What time of the day does Kristopher finish school?
- Which farm animals does he feed every day? What does he feed them? What time does he feed them every day?



RE-FOCUS students' attention on their task. Form pairs of students and remind each pair that they will be creating a farm calendar. Ask pairs to **RECALL** Kristopher's farm, and **TALK** if Kristopher's farm was the subject of a calendar what images of the farm might be included? What animals might be included? How could we find out how long it takes to produce cattle for market? Who could we ask? Could we email our question to someone? Who?



REPLAY the video and ask students to **OBSERVE** what animals the farm raises? What equipment is used on the farm? How might it be used? What animals produce food? What food do they produce for us to eat? How long might it take for a chicken to produce an egg for us to eat? How could we find out? Is there someone in the class who has chickens?



REMIND pairs of students that they need to determine which questions they need to **ASK** to ensure each month of the year shows something about farms and how long it takes to do on the calendar they will be producing.

Discuss how farmers use calendars to help them schedule things they need to do at different times of a day, week, month, season and year.



Find out about how long it takes to do some tasks on a farm.

STUDENT TASK

Investigate farms that could feature on the students' calendars



Note: This is a suggested assessment activity.

Re-state to the class that they will be **LISTENING** to stories, **VIEWING** images, **LEARNING** objects and **USING** websites containing videos about farms to develop an understanding of:

- What tasks are undertaken on farms.
- How farm animals are raised, provided shelter and grown to produce food.
- How crops are grown to produce fibres.
- How long it takes to produce some foods or fibres.

Remind pairs that their goal is to **CREATE** their own calendar about a farm and how long it takes to do some tasks on a farm.

Form pairs and listen to a story



For schools who have access to this book, ask students in pairs to **LISTEN** to a story titled 'A Year on the Farm' by Penny Matthews and illustrated by Andrew McLean to **FIND OUT** more about what different tasks that need to be undertaken on a farm all year round, where animals are raised, crops are grown and where different foods we eat and fibres we use are produced.

This picture book by Penny Matthews describes a year on an Australian farm from the viewpoint of a farm child.

Each month of the year dictates the tasks that must be done on a small mixed farm. Fruit ripens and is picked, lambs are born, sheep are shorn, hay is harvested and baled. Summer is followed by autumn, winter and spring; brown paddocks become green again, and always farmers wait for rain.

A 'Year on Our Farm' shows the passage of the seasons through the eyes of the children for whom the farm is home.



Re-read the story and using **Resource 1.6** ask students to complete the calendar by **DRAWING** what happens on the farm each month.

Months of the year



Using 'A Year on the Farm' by Penny Matthews and illustrated by Andrew McLean **TALK** with the students about the bottom left-hand corner of the pages where students can find a word in capitals, a picture of a tree and a smaller word underneath.



TALK about the seasons: summer, autumn, winter and spring and the months associated with each one.



FOCUS on 'summer' in the story and how the 'trees are loaded with fruit'. **BRAINSTORM** the fruits that might be grown on farms in summer.

Talk more about the Australian summers experienced by sheep and cattle farmers and **DISCUSS** how many farmers need to provide their sheep and cattle with extra feed in the hot summer months and regularly check their water supplies too.



Step 2: Explore the topic



DISCUSS cotton farms in summer and how cotton farmers are usually busy irrigating or watering their crops and checking for weeds and pests in summer.

TALK about tree farms or plantations of trees in summer that use land and water to produce a crop.



Return to the story 'A Year on the Farm' and **INVESTIGATE** what happens in autumn, winter and spring.



REFLECT on farms that produce food and fibre and **CONSIDER** what they might look like, sound like and 'feel' like in autumn, winter and spring.



Using the calendar outline in **Resource 1.6 ASK** students to:

- use different colours to **SHOW** which months make up the different seasons (summer, autumn, winter and spring).
- **PLACE** a 'tick' in the months when farmers would need to provide their animals with extra feed and regularly check their water supplies due to heat and a lack of rain.
- use a 'cross' to **SHOW** the months when the farm's water tanks could be over-flowing if they had good rains.
- use a 'flower symbol' to **SHOW** the months when the farm's trees might be in blossom.
- use a 'leaf symbol' to **SHOW** the months when the farm's trees might be losing their leaves.
- **SELECT** the month of March and show how long it might take to plant cabbages and carrots.

Create a picture book using the months of the year or seasons to describe what happens on a farm and how farm animals or a crop are grown and cared for on farms.

Re-focus on the student task

FOCUS students' attention on their task of **CREATING** their very own calendar that needs to include how long it takes how long it takes to do some tasks on a farm.

TALK about a mixed farm like the one described in the story 'A Year on our Farm' and describe what parts of the story could be used in a calendar and what could be included that could describe how long it takes to do tasks on a farm.

Our farm



For classes who may not have had access to the story 'A Year on our Farm' and for classes that might like an additional shared experience about what happens on farms, **READ** the story 'Our Farm' in **Resource 1.7**.

Ask students to **VISUALISE** the characters, farm environs and what happens on this farm each month of the year and **READ** about how long many tasks on the farm take.

Re-read the story and ask students to **COMPLETE** the calendar in **Resource 1.6** and **DRAW** what happens on this farm each month and to scribe how long it takes to do.



Step 2: Explore the topic

Choose one type of farm and create a calendar about what happens there, include information about how long some of the tasks might take to do.

More stories to investigate sheep farming



If additional stimulus is required to support student understandings about what happens on farms, in reading groups **READ** e-Books like:

‘Fluffy’s Getting Shorn’

http://www.envirostories.com.au/es2012/es2012_CRC_Fluffy/index.html

‘Life as a Sheep’

http://www.envirostories.com.au/es2012/es2012_BRG_LifeSheep/index.html

‘My Life on a Sheep Farm’

http://www.envirostories.com.au/es2012/es2012_CW_SheepFarm/index.html



As a class **CONSIDER** what information could be included on a calendar about what happens on a sheep farm. Ask students if they found any information about how long it takes to do tasks on the sheep farms they read about. Use the calendar outline in **Resource 1.6** to **DRAW** ideas and **WRITE** what happens and how long it might take.



Envirostories to investigate cotton farming



In reading groups ask students to **READ** the following e-Books about cotton farming.

Titles could include:

‘Cotton on Koramba’

http://www.envirostories.com.au/es2012/es2012_CRC_Koramba/index.html

‘Our Farms are Our Future’

http://www.envirostories.com.au/es2012/es2012_BRG_OFOF/index.html

‘The Farmer Changes His Ways’

http://www.envirostories.com.au/es2012/es2012_CRC_FarmerChanges/index.html

‘I Own It All’

http://www.envirostories.com.au/es2012/es2012_CRC_Ownitall/index.html



As a class **CONSIDER** what information could be included on a calendar about what happens on a cotton farm. Ask students if they found any information about how long it takes to do tasks on cotton farms they read about. Use the calendar outline in **Resource 1.6** to **DRAW** ideas and **WRITE** what happens and how long it might take.



Use the calendar outline in **Resource 1.6** to draw ideas.

De-brief



TALK with the class about the range of farm they have learned something about. For example: mixed farms, cotton farms and sheep farms, farms that grow garlic, have horse, cattle and chooks.

REMIND the class that there are many other types of farms that produce food or fibres and their task is to choose one type of farm and **CREATE** a calendar about what happens there and to include information about how long some of the tasks might take to do.



Step 3: Explain how long it takes

Purpose

To provide students with opportunities to:

- grow seeds and see how long they take to grow
- view a range of calendars
- draft a calendar about what happens on a farm and how long it takes to do some tasks
- construct questions to find out what farm products they eat, wear or use
- gather information about the topic
- explore where different foods they eat come from.

Grow some seeds



As a class **FIND** out how long it takes to grow a vegetable like alfalfa sprouts from seed. **WATCH** the Questacon video that can be found at: <https://www.questacon.edu.au/outreach/programs/science-circus/videos/mini-greenhouse>



Try growing your own and **EXPLORE** how long they take to grow. *Note: Other fast growing plants include radishes (25 days from seed) and salad greens such as rocket and leaf lettuce (30 days from seed).*

Alternatively try growing a 'Grass Head'. For step-by-step instructions see: <http://www.kidspot.com.au/kids-activities-and-games/Outdoor-activities+9/Grow-a-grass-head+11444.htm>



Whilst growing the seeds **RECORD** as a class how long it takes the seeds to grow.

Calendars



Ask each pair of students to **LOOK** at other calendars for inspiration and then to create their calendar masterpiece.

MODEL a range of different types, see:

Family Crafts: How to Make Calendars

<http://familycrafts.about.com/od/calendars/>

Approaches to growing, raising and caring for farm animals

Using the information gathered, each group **PREPARES** a draft presentation using a calendar, **EXPLAINING** the different things that can happen on a farm all year round where animals are raised, crops are grown and where different foods we eat and fibres we use are produced. Remind students to include how long it takes to do some of these tasks.

Constructing questions

EXPLAIN to the students that they will be exploring products that can be produced from plants and animals from farms, for example food products, paper and wood products, or clothes and fabrics and yarns. Explain that each student will **CHOOSE** simple questions to ask a family member to **FIND** out what farm products they eat, wear or use.



As a class, **LIST** questions that could be asked of a family member to find out what farm products they eat, wear or use.



TALK about questions that can be asked to find out information.

Talk about questions that can begin with words like:

What?

Which?

How many?

What other things?

Note: Teachers may need to send a note home to family members asking them to record what farm products they eat, wear or use. Students might be asked to draw one food or fibre product that their family talks about.



Step 3: Explain how long it takes

Think about at dinner time and where a steak, potato, lamb chops or sausage might come from.

Do you know where your food comes from?



PLAY 'Plant or Animal' to help students **UNDERSTAND** more about whether food comes from plants or animals.

See: <http://www.foodafactoflife.org.uk/Activity.aspx?siteId=13§ionId=54&contentId=173>

Use more games



As a class **VIEW** and **PLAY** the interactive learning object 'Where do my meals come from?'

For the 5-8 year old version: <http://www.foodafactoflife.org.uk/Activity.aspx?siteId=13§ionId=54&contentId=174>

For the 8-11 year old version: <http://www.foodafactoflife.org.uk/Activity.aspx?siteId=13§ionId=54&contentId=175>

PLAY both versions (i.e. game for 5-8 year olds and 8-11 year olds).



TALK about breakfast time and where eggs, bacon, toast and butter might come from. **TALK** about lunch time and where ham or tuna in a sandwich might come from? **THINK** about at dinner time and where a steak, potato, lamb chops or sausage might come from.



IMAGINE a roast dinner, with meat, potatoes, peas, carrots and beans. Think about the steps needed to get each of these food items.

CONSIDER a pork steak and salad, with lettuce, onions, tomato, carrots and herbs. Think about the steps needed to get each of these food items.

THINK about Lasagne or Spaghetti Bolognese. Where might the meat, pasta, tomatoes, onions, herbs and cheese come from?

IMAGINE a Tuna Mornay. Where might the tuna come from?

CONSIDER a banana smoothie. Where might the milk, yoghurt and bananas come from?

PLAY the 'Farm to Fork Challenge' at: <http://www.foodafactoflife.org.uk/Activity.aspx?siteId=13§ionId=54&contentId=176>



FIND the correct stages for ham, apple juice and fish fingers.

CONSIDER the stages in their production. **DRAW** these.



Step 4: Elaborate on concepts and ideas

Presentation planning

Purpose

To provide students with opportunities to:

- share the calendar or picture book that uses the months of the year or seasons to describe what happens on a farm and how long some tasks take
- share if their family eats, wears or uses food or fibre produced by farmers
- apply what they have learned and communicate the food or fibres eaten, worn or used and the family members
- plan their presentation of their calendar that includes how long it takes to do some tasks
- share investigation findings.

Working with the data from the questions asked of family members

A number of strategies can be used to help students make sense of the information the class as a whole has gathered. Some suggestions are:

- **PREPARE** a report to include in the school newsletter.
- **EMAIL** the Primary Industries Education Foundation Australia and tell them about the food and fibres eaten, worn and used in the class and their families.
Email: info@primaryindustrieseducation.com.au

Going further with the planning of the presentation

Invite students to **CONFIRM** the idea planned for their presentation.



Ask students to **CREATE** a final plan for completing the calendar about a farm. Students may with the help of an adult, need to finalise their calendar that uses the months of the year or seasons to **DESCRIBE** what happens on a farm and includes something about how long it takes to do some tasks.

Review and submit

Invite students to **REVISE** and fine-tune their presentation of the calendar that uses the months of the year or seasons to describe what happens on a farm and includes something. about how long it takes to do some tasks.

Hold a parent morning or afternoon tea and **SHARE** calendars.

DISPLAY them in the school library.

Calendar Games

Build on the students' time and calendar understandings. **PLAY** games that use a calendar as a playing board.

See: Magic Calendar Game <http://www.bestschoolgames.com/educational-games/magic-calendar/>

Mr. Nussbaum: Calendar Clowns <http://mrnussbaum.com/calendarclowns/>



Step 5: Evaluating

Think back and evaluate

Purpose

To provide students with opportunities to:

- reflect on their own learning
- collate data for assessment.

To provide teachers with:

- insights into students' understanding and attitudes, as well as their perceptions of their own strengths and weaknesses.

Reflective writing



Begin by modelling reflective writing through a whole class learning log. Alternatively, you could **MODEL** your own entry 'thinking aloud' as you write.

PROVIDE students with a set of focus questions for their writing. Ask students to circle or colour the 'smiley faces' to show how they feel about their learning and ask them to **DRAW** the section they liked best underneath their responses:

I did my best.



I listened well.



I worked with my partner.



I could tell you what I know about how farms produce animals, crops and food and fibre that we eat, wear and use?



I liked learning about:

References

Australian Academy of Science. (2005) *Primary Connections*, Canberra, Australia.
Cecil, N. (1995) *The Art of Inquiry: questioning strategies for K-6 classrooms*, Peguis, Canada.
Gardner, H. (1985) *Frames of Mind: the theory of multiple intelligences*, Basic Books, New York.
Hamston, J. and Murdock, K. (1996) *Integrating Socially: units of work for social education*, Eleanor Curtin, Melbourne.
Hill, S. and Hill, T. (1990) *The Collaborative Classroom*, Eleanor Curtin, Melbourne.
Matthews, P. & McLean, A. (2002) *A Year on our Farm*, Ashton Scholastic, New South Wales.
Morimoto, J and Smith, H. (1990) *Kenju's Forest*. Harper Collins, Sydney.
Wilks, S. (1992) *Critical and Creative Thinking: strategies for classroom enquiry*, Eleanor Curtin, Melbourne.
Zienkiewicz, S. (2014) *My Farm Visit*. Adelaide, Australia.

Websites (viewed February 2015)

This is a list of websites used in this unit for teacher use. As content of the websites used in this unit is updated or moved, hyperlinks may not always function.

Australian Broadcasting Corporation

<https://open.abc.net.au/projects/day-in-the-life-11bh6tz/contributions/kristopher-a-school-of-the-air-student-from-cooliwanyah-station-81re9hw>

Australian Curriculum, Assessment and Reporting Authority. Australian Curriculum

<http://www.australiancurriculum.edu.au/>

Australian Forestry Standard

<http://www.forestrystandard.org.au/>

Australian Government Department of Agriculture

<http://www.agriculture.gov.au/forestry>

http://data.daff.gov.au/data/warehouse/9aam/afstad9aamd003/2012/AustFishStats_2012_v1.0.0.pdf

Australian Pork Limited

<http://www.australianpork.com.au>

Cotton Australia

<http://www.cottonaustralia.com.au>

http://cottonaustralia.com.au/uploads/publications/POCKET_GUIDE_-_FINAL.pdf

Creative Commons

<http://creativecommons.org/licenses/by/3.0/au/deed.en>

Envirostories:

Cotton on Koramba http://www.envirostories.com.au/es2012/es2012_CRC_Koramba/index.html

Fluffy's Getting Shorn http://www.envirostories.com.au/es2012/es2012_CRC_Fluffy/index.html

I Own It All http://www.envirostories.com.au/es2012/es2012_CRC_Ownitall/index.html

Life as a Sheep http://www.envirostories.com.au/es2012/es2012_BRG_LifeSheep/index.html

My Life on a Sheep Farm http://www.envirostories.com.au/es2012/es2012_CW_SheepFarm/index.html

Our Farms are Our Future http://www.envirostories.com.au/es2012/es2012_BRG_OFOF/index.html

The Farmer Changes His Ways http://www.envirostories.com.au/es2012/es2012_CRC_FarmerChanges/index.html

A Weekend on our Farm http://www.envirostories.com.au/es2012/es2012_CW_WeekonFarm/index.html

Family Crafts: How to Make Calendars

<http://familycrafts.about.com/od/calendars/>

Fisheries Research Development Corporation

<http://frdc.com.au/>

Food a Fact of Life:

Farm to Fork Challenge. <http://www.foodafactoflife.org.uk/Activity.aspx?siteId=13§ionId=54&contentId=176>

Where do my meals come from. <http://www.foodafactoflife.org.uk/Activity.aspx?siteId=13§ionId=54&contentId=174>

Plant or Animal. <http://www.foodafactoflife.org.uk/Activity.aspx?siteId=13§ionId=54&contentId=173>

Forest Learning

<http://www.forestlearning.edu.au>

Forest Stewardship Council Australia

<http://au.fsc.org/>

References

Garnaut Climate Change Review

<http://www.garnautreview.org.au/>

Kids spot. Grow a grass head

<http://www.kidspot.com.au/kids-activities-and-games/Outdoor-activities+9/Grow-a-grass-head+11444.htm>

Meat and Livestock Australia

<http://www.mla.com.au>

Mr. Nussbaum Calendar Clowns

<http://mrnussbaum.com/calendarclowns/>

National Farmers' Federation. Farm Facts 2012

<http://www.nff.org.au/farm-facts.html>

Primary Connections

<http://www.primaryconnections.org.au/about/teaching>

Questacon

<https://www.questacon.edu.au/outreach/programs/science-circus/videos/mini-greenhouse>

School Games

<http://www.bestschoolgames.com/educational-games/magic-calendar/>

Wood Naturally Better

<http://www.naturallybetter.com.au/>

Resource 1.1

Farms

Match the words below to the photo of the farms.

Sheep farm

Cattle farm

Wheat farm

Cotton farm



Photo courtesy of Cotton Australia

What kind of farm is this?



Photo courtesy of Simone Kain

What kind of farm is this?



Photo courtesy of Meat & Livestock Australia

What kind of farm is this?



Photo courtesy of Meat & Livestock Australia

What kind of farm is this?

Match the words below to the photo of the farms.

Alpaca farm

Sugarcane farm

Vineyard

Apple orchard



Photo courtesy of Pixabay

What kind of farm is this?



Photo courtesy of Paul Smole

What kind of farm is this?



Photo courtesy of Bob Winters

What kind of farm is this?



Photo courtesy of Bob Winters

What kind of farm is this?

Resource 1.2

Time

Tick the images you can find that help us measure time.



Photo courtesy of Paul Smole

☐

Photo courtesy of Paul Smole

☐

Photo courtesy of Paul Smole

☐

Photo courtesy of Paul Smole

☐

Tick the images you can find that help us measure time.



Photo courtesy of Paul Smole



Photo courtesy of Paul Smole



Photo courtesy of Paul Smole



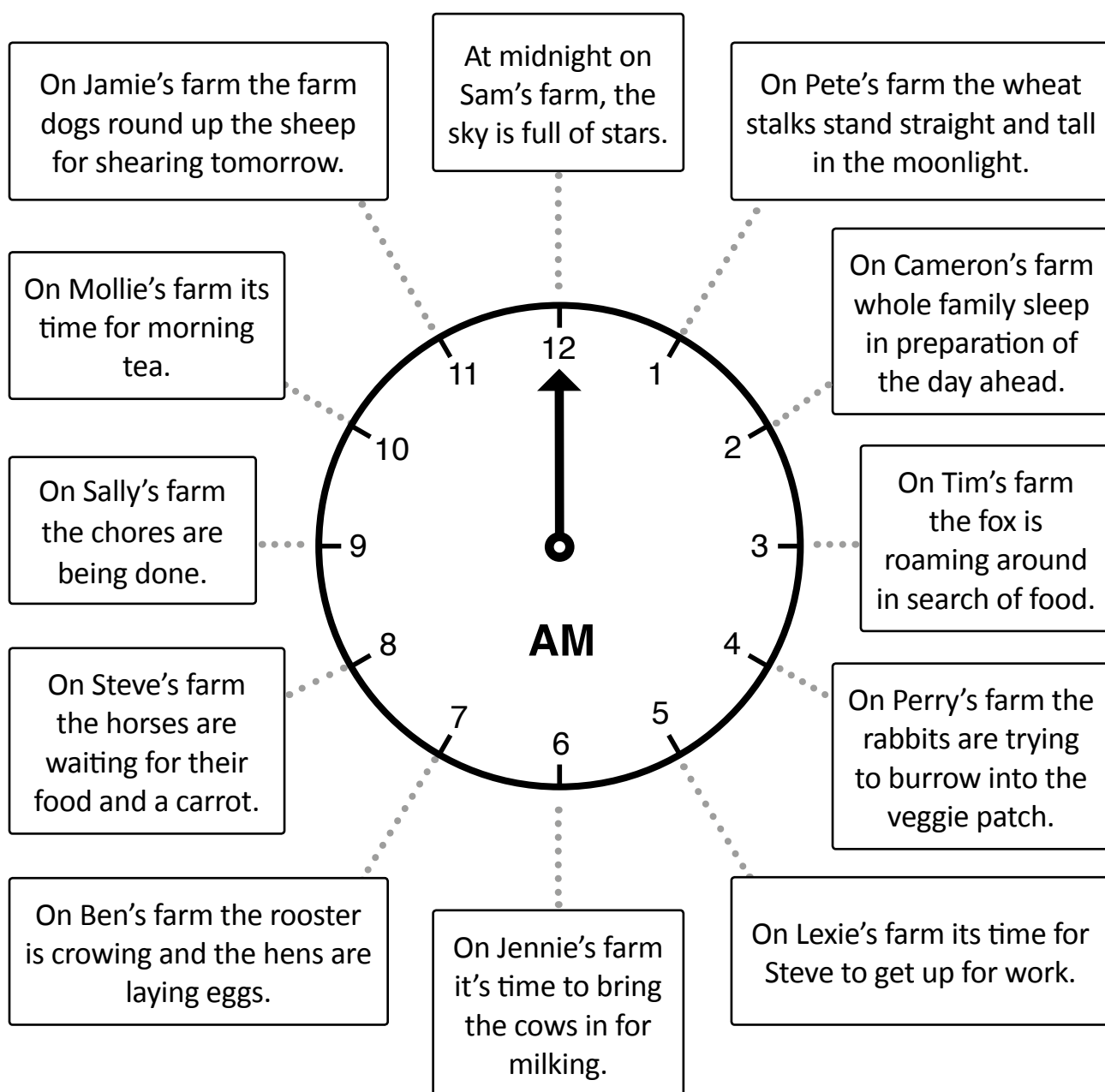
Photo courtesy of Paul Smole



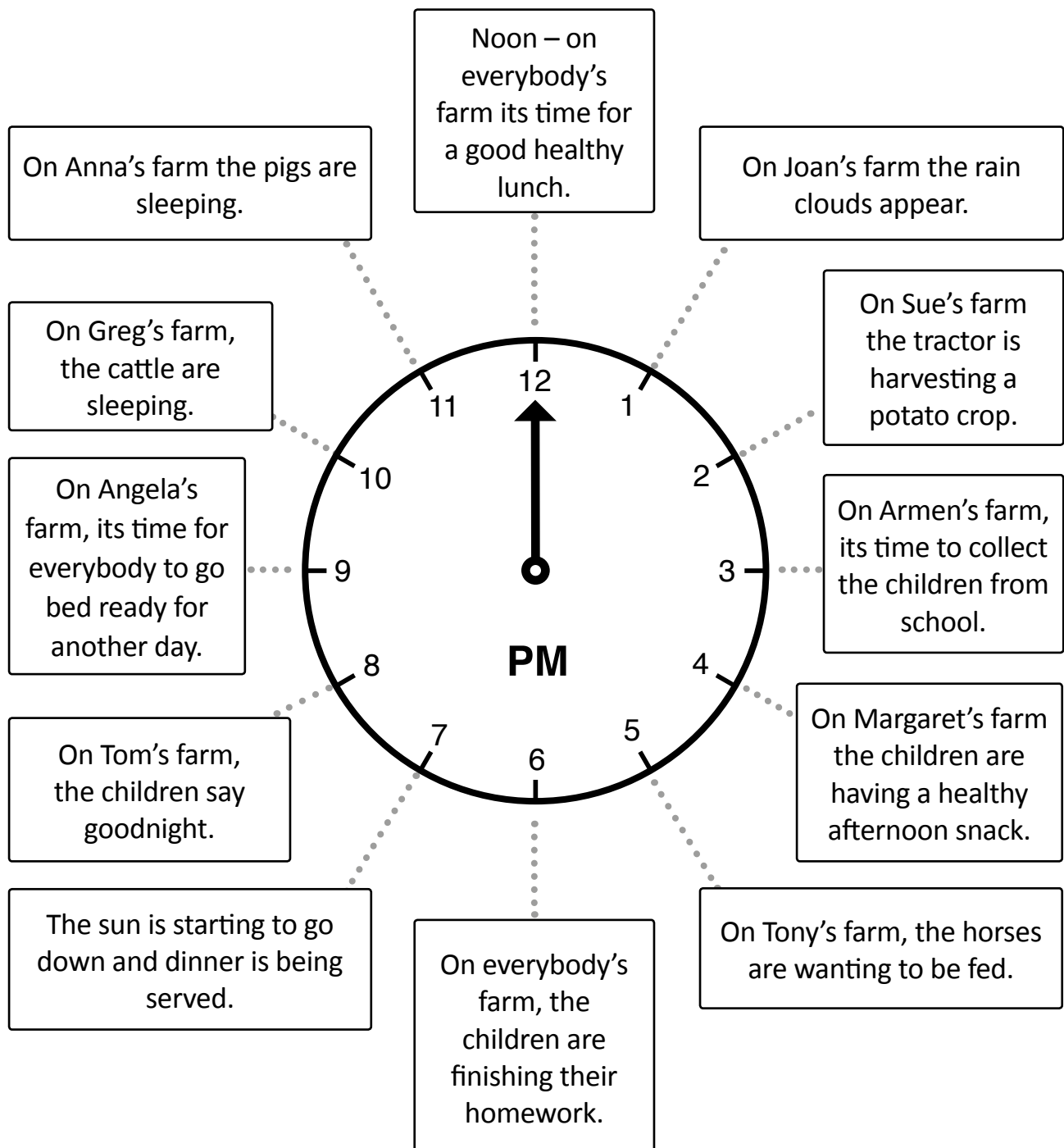
Resource 1.3

What time is it?

Read a story on the clock below that can transport the class through different times of the day on farms. Students might draw the hour hand from the centre of the clock to the corresponding number.

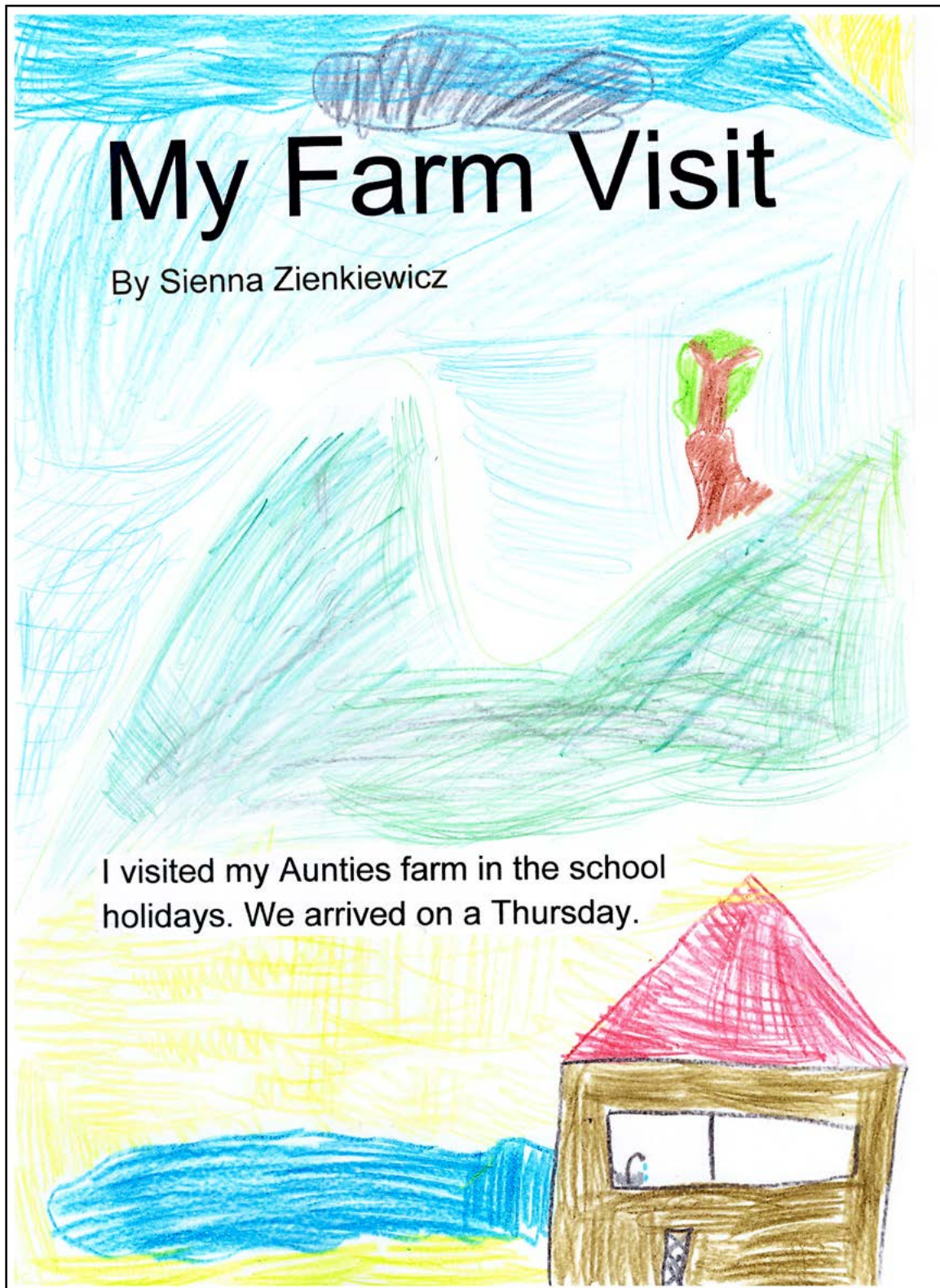


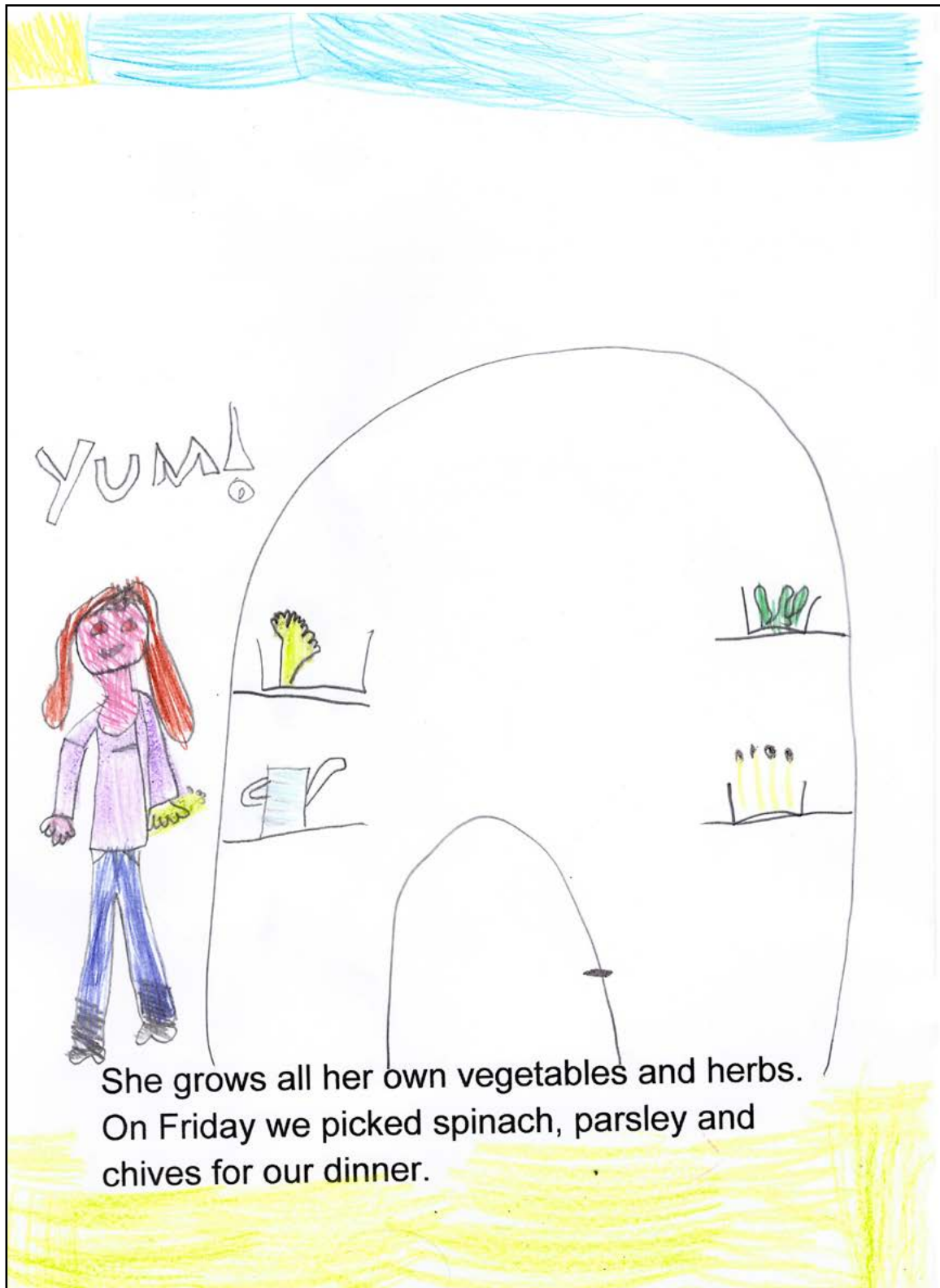
Read a story on the clock below that can transport the class through different times of the day on farms. Students might draw the hour hand from the centre of the clock to the corresponding number.

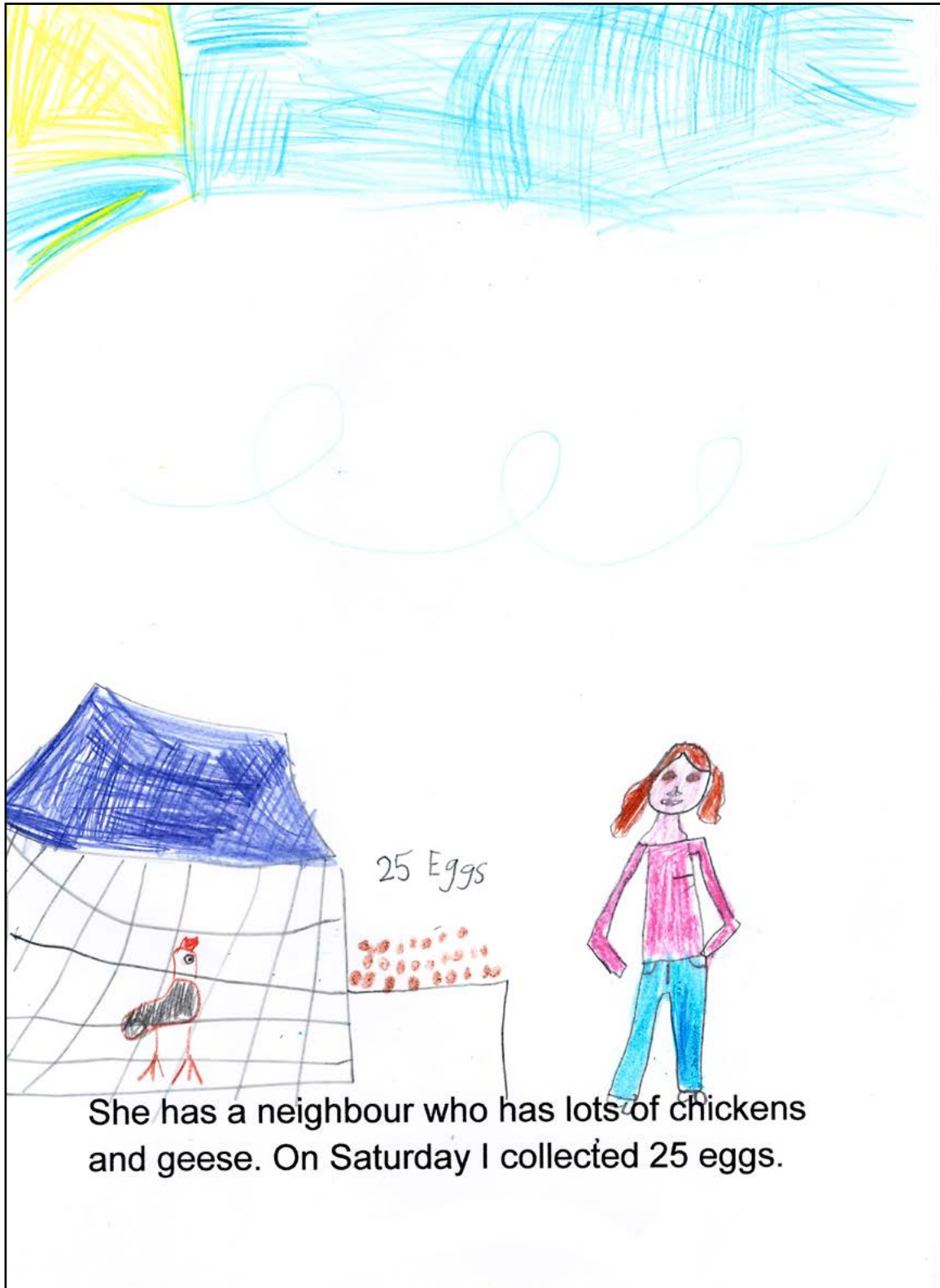


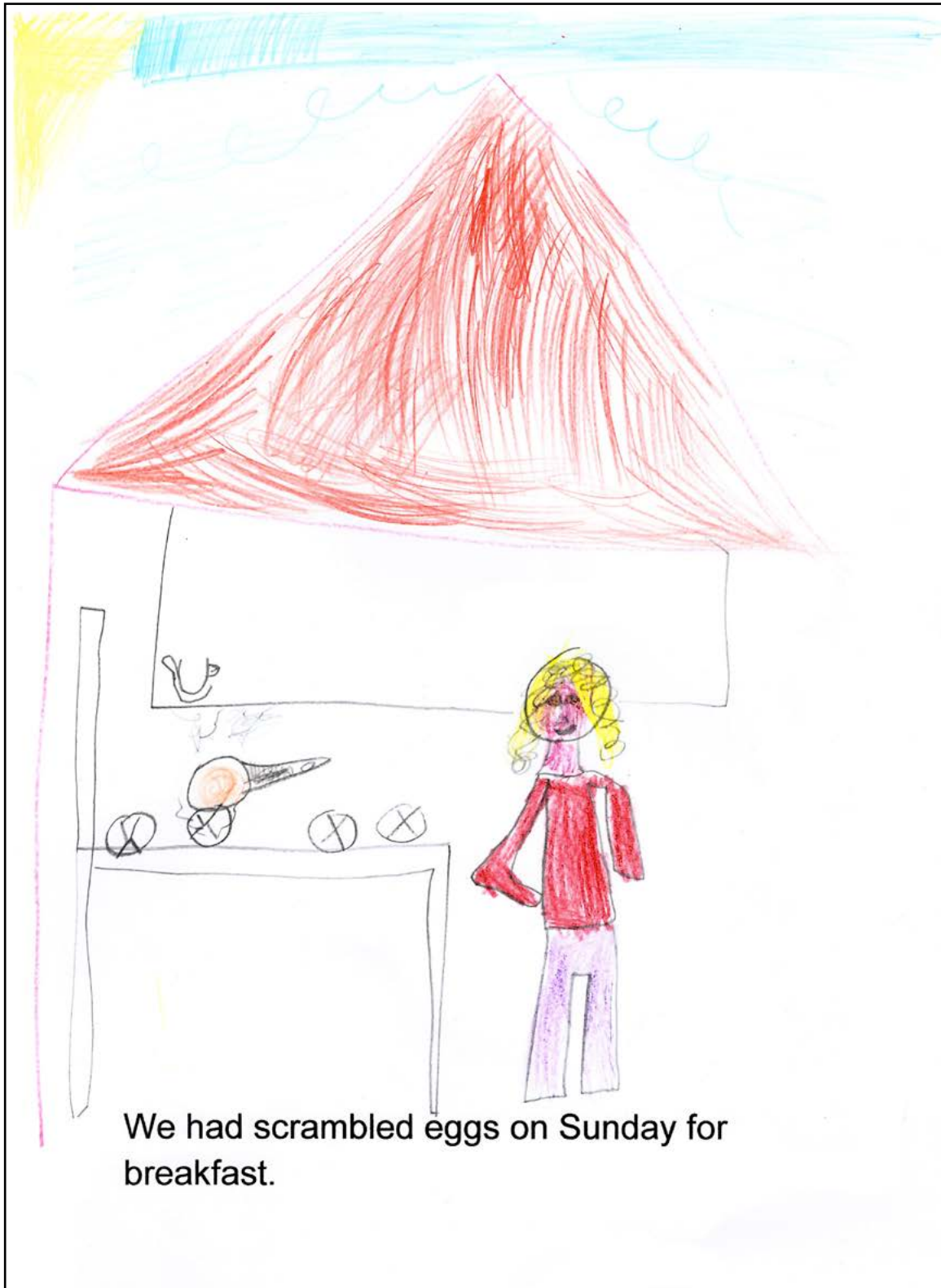
Resource 1.4

My Farm Visit

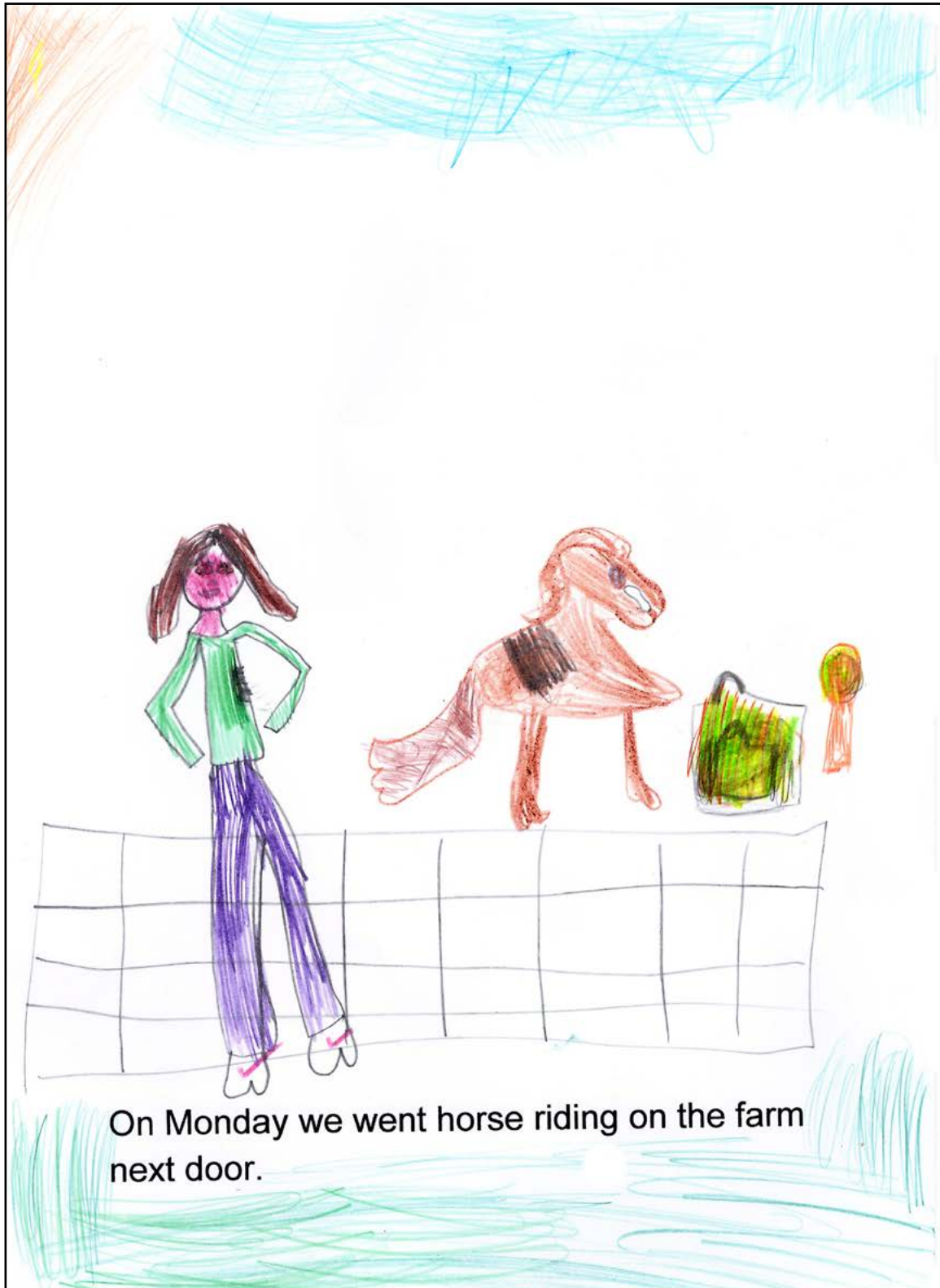








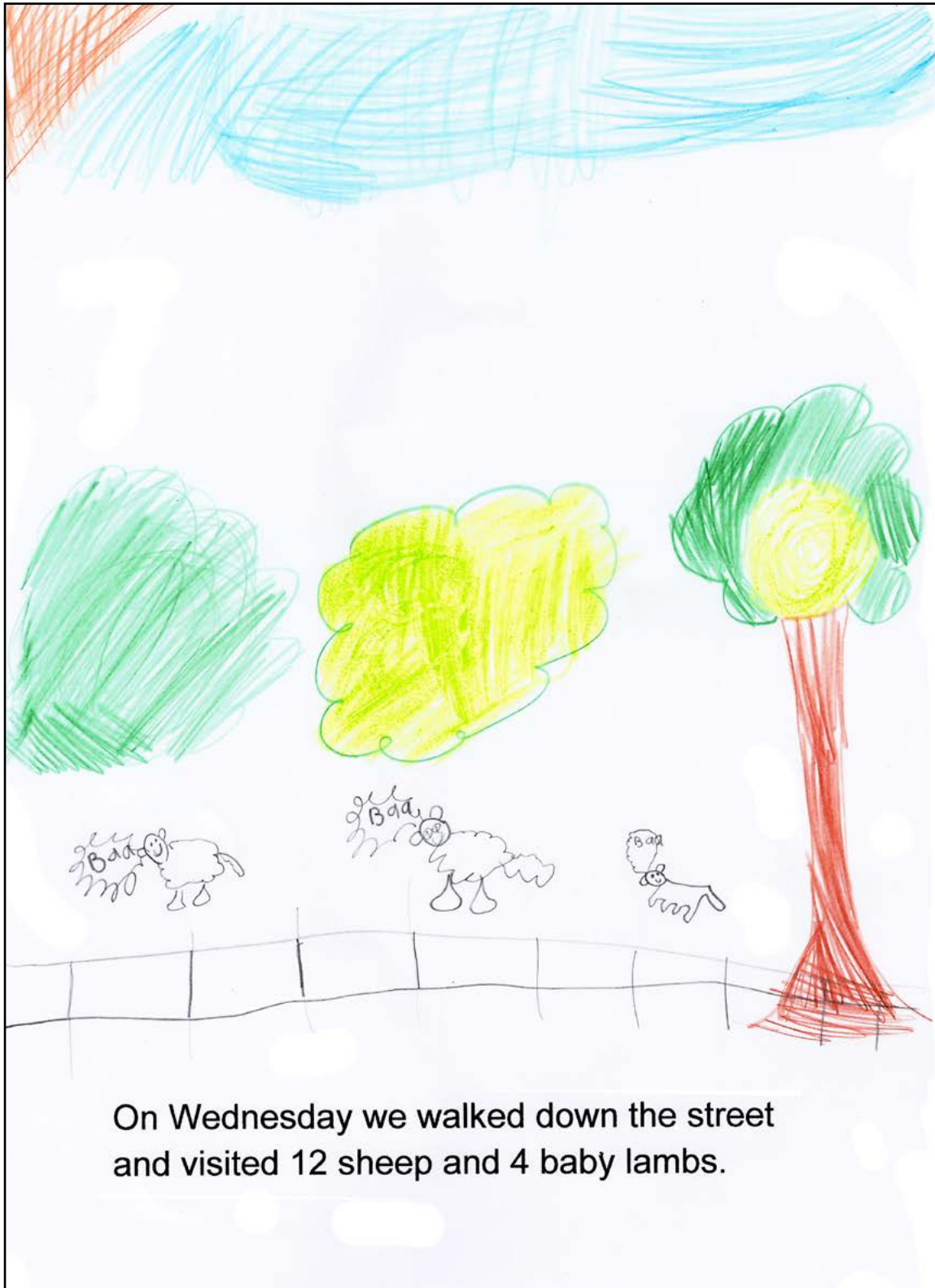
We had scrambled eggs on Sunday for breakfast.



On Monday we went horse riding on the farm next door.



On Tuesday I collected 18 eggs from the chickens.



On Wednesday we walked down the street
and visited 12 sheep and 4 baby lambs.



Resource 1.5

Growing advice

Read the 'Growing advice'. Find out how long it takes before the beetroot and coriander can be harvested.

Beetroot

Growing advice

When:	Early spring through to late autumn
Where:	In a garden bed or containers
How:	Sow in rows 30 centimetres apart Cover with 2.5 centimetres of soil Keep moist
Harvest:	0-12 weeks

Coriander

Growing advice

When:	Plant in spring, summer or autumn.
Where:	In a garden bed or containers.
How:	Sow in rows 5 centimetres deep Cover with soil Keep moist
Harvest:	18-24 weeks

Resource 1.6

What do horses need?

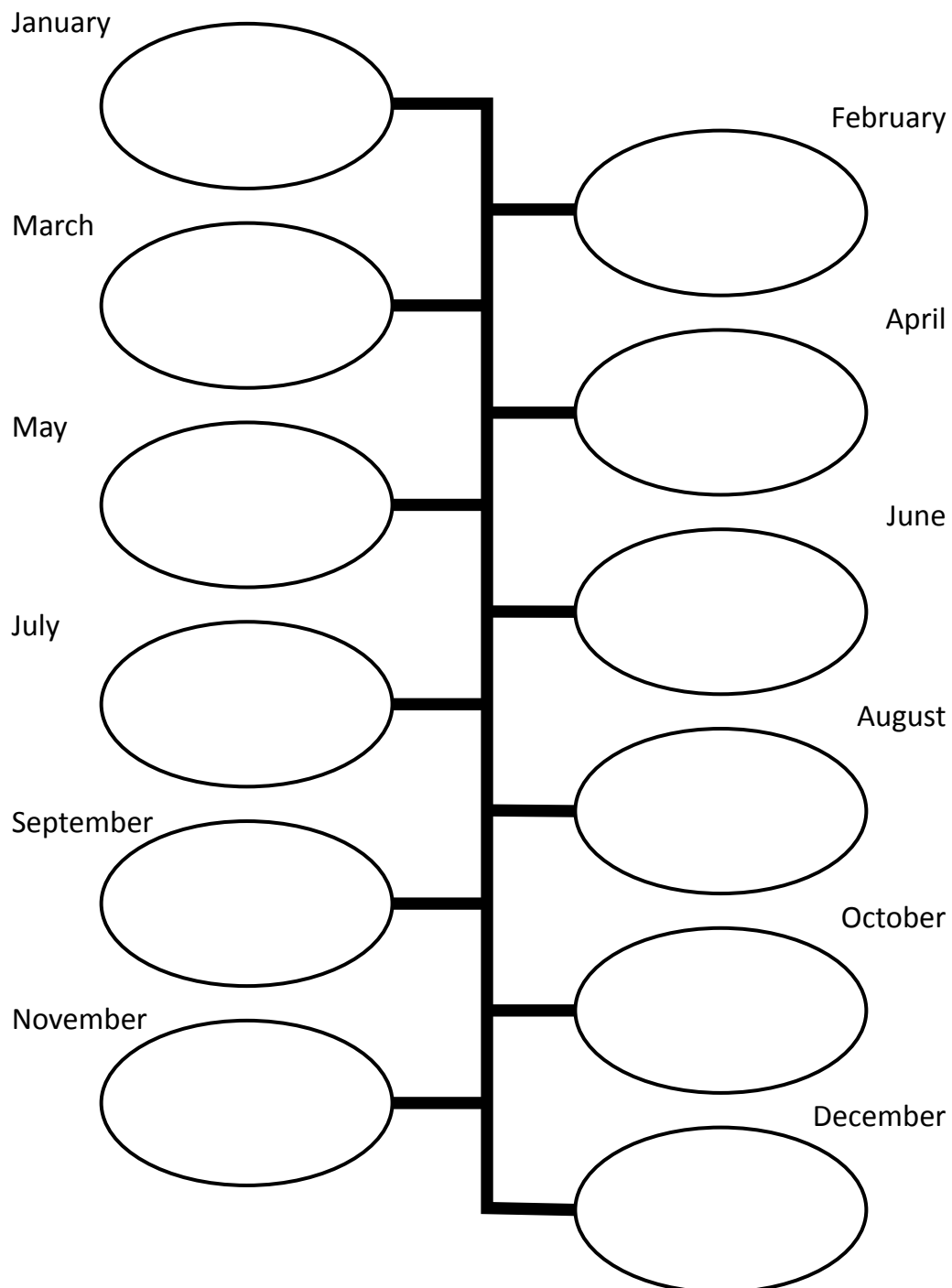
Find out about the horses on a farm need throughout the year.

January It's summer and the horses need lots of water to drink. It takes ten minutes to fill each trough.	February It's the middle of summer and the horses need the shade to keep cool.	March It's autumn and the horses need to be wormed. It takes a few minutes to worm the horses.
April It's the middle of autumn and the farrier arrives to do the horses feet. It takes the farrier an hour to trim each horse's hoofs.	May It's late autumn and the horses need food supplements as the grass is dying off.	June It's winter and the horses need worming again. It takes a few minutes to worm the horses.
July It's the middle winter and the horses need their blankets on each day and night. It takes five minutes to put the blankets on.	August It's getting warmer and the farrier comes again to do the horses feet. It takes the farrier an hour to trim each horse's hoofs.	September It's spring and the paddocks are full of spring grasses for the horses to eat.
October It's the middle of spring and it's time to worm the horses... again. It takes a few minutes to worm the horses.	November It's late spring and the paddock grasses are drying out.	December It's summer and the horses have shed their coat and need a good brushing. It takes fifteen minutes to brush each horse.

Resource 1.7

Timelines

Use the timeline below to show what horses need from January through to December each year.



Note: Teachers please enlarge this to A3 size on the photocopier.

Resource 1.8

Complete the calendar

This calendar is missing some information. Draw what might be happening on a farm during each month.

January	February	March
April	May	June
July	August	September
October	November	December

Resource 1.9

Our farm

On our farm we raise sheep and grow garlic. This is what happens each month on our farm.

January It's really hot and all the sheep find shade to stay cool. It takes the sheep only minutes to find the shade.	February It's still summer and the water troughs need filling everyday. It takes 30 minutes to fill the troughs.	March It's autumn and we plant the garlic. It took three days to plant the garlic.
April It's the middle of autumn and we have had good rains. No need to water the garlic.	May It's late autumn and the baby lambs are being born.	June It's winter and the sheep have lots of pasture to eat.
July It's cold and wet and the rain tanks are full. It has taken rain on 12 days to fill the water tanks.	August It's getting warmer and the birds are building their nests. It takes weeks for the nests to be built.	September It's spring and we add mulch to the garlic crop and water on hot days. It takes an hour each night to water the garlic.
October It's the middle of spring, sheep are being shorn and we have to clean and bale the wool. It has taken three days to shear 300 sheep.	November It's late spring and the garlic is being harvested and hung to dry. It takes three days to harvest the garlic. It takes two days to hang them in bunches in the sheds.	December It's summer and the snakes are out and the tractor is slashing the paddocks. It takes the Tim and the tractor all day to slash the paddocks.

