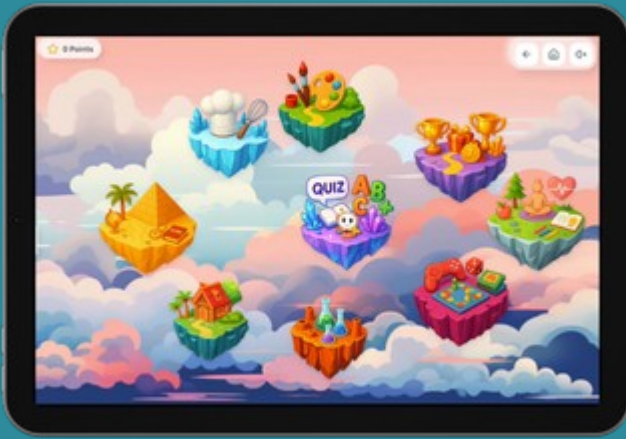


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Life Cycle Detectives - Year 3

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Unit at a glance

Purpose

Year 3 Science: compare the life cycles of a bean plant and a butterfly, classify living and non-living examples, ask questions, plan a safe comparison, record evidence and communicate a reasoned conclusion.

Learning students demonstrate

Classify living, once-living and never-living examples with reasons. Distinguish growth in one organism from reproduction across generations. Order selected plant and animal stages. Compare cycles using shared criteria. Explain a counterexample and a limitation of a model.

Ten complete lessons

Teach Lessons 01–10 in order, about 60 minutes each. Every lesson has its own ten-slide PowerPoint with a cover, learning focus, explicit model, guided task, evidence discussion, exit/reflection and closing. The next pages give exact filenames and an eight-session option.

Evidence through the unit

Collect initial explanations in W01–W02, questions and plans in W03–W04, dated observations in W06, comparisons and corrections in W07–W08, and the explanation/conference and safe can assessment in W09–W10. Use Assessment A1 and Rubric R1 for final judgements.

Access to the same learning

Students may speak, point, draw, write, dictate, demonstrate or use a communication device. Offer pictures, vocabulary, enlarged pages, an uncluttered workspace and time to respond. Assess scientific reasoning, rather than handwriting, speech length or drawing skill.

Time and living things

Schedule short observations between lessons. A full bean cycle can take longer than this unit. Use the supplied clearly identified stage models and water bottles; record only changes actually observed in class. Never promise that every seed will germinate.

Presentation file guide

Lesson 01 – What counts as living

Life Cycle Detectives – Year 3 – Lesson 01 – Presentation.pptx

Lesson 02 – Once living

Life Cycle Detectives – Year 3 – Lesson 02 – Presentation.pptx

Lesson 03 – Life-cycle questions

Life Cycle Detectives – Year 3 – Lesson 03 – Presentation.pptx

Lesson 04 – Plant cycle

Life Cycle Detectives – Year 3 – Lesson 04 – Presentation.pptx

Lesson 05 – Animal cycle

Life Cycle Detectives – Year 3 – Lesson 05 – Presentation.pptx

Lesson 06 – Observe over time

Life Cycle Detectives – Year 3 – Lesson 06 – Presentation.pptx

Lesson 07 – Compare cycles

Life Cycle Detectives – Year 3 – Lesson 07 – Presentation.pptx

Lesson 08 – Explain exceptions

Life Cycle Detectives – Year 3 – Lesson 08 – Presentation.pptx

Lesson 09 – Life-cycle conference

Life Cycle Detectives – Year 3 – Lesson 09 – Presentation.pptx

Lesson 10 – Care and conservation

Life Cycle Detectives – Year 3 – Lesson 10 – Presentation.pptx

Teaching in eight sessions

Session 1 – Lessons 01 + 02

8 min: initial sort (01 slide 3; 02 slide 3). 12 min: model several clues and living origin (01 slides 4–6; 02 slides 4–6). 25 min: W01 classification plus W02 dead-leaf revision. 10 min: compare and revise reasons. 5 min: origin-based exit. W02 table is useful for further practice.

Session 2 – Lesson 03

Use all Lesson 03 teaching phases: questions, growth versus reproduction, stage models, prediction with a clue, and evidence needed to check it. Complete W03.

Session 3 – Lesson 04

Use all Lesson 04 phases. Complete W04, set up A1–A3, and schedule B1–B3 three days later. Start W06 records. Keep care and measurement consistent.

Session 4 – Lesson 05

Use all Lesson 05 phases for butterfly stages and safe evidence; complete W05. Keep selected stages distinct from an exact timeline.

Session 5 – Lesson 06

Use all Lesson 06 phases, actual W06 records and clearly labelled prediction data. Complete prediction with results and discuss a method limit.

Session 6 – Lesson 07

Use all Lesson 07 phases. Complete W07 and compare bean/butterfly cycles with the same three criteria. Use the Evidence Trail game as guided reasoning practice.

Session 7 – Lesson 08

Use all Lesson 08 phases and W08. Correct the all-organisms-have-a-pupa claim, apply the bounded kitten example and explain a model limitation.

Session 8 – Lessons 09 + 10

8 min: retrieval. 12 min: review evidence criteria and model a safe care claim (09 slides 2–5; 10 slides 3–5). 25 min: A1/W09 conferences while other students prepare W10. 10 min: share care messages and give evidence feedback (10 slides 7–8). 5 min: reflect (09 slide 9; 10 slide 9). Collect evidence during tasks so every student is assessed. Use the quiz flexibly for retrieval; allow extra response time when needed.

Practical setup and care

Before the unit

Prepare a healthy established bean plant or save photographs for classification. Use ordinary untreated beans of one variety; check school allergies, access and seed-handling rules. Adults prepare damp potting mix away from students. Avoid airborne dust; follow the product directions. Use trays and safe water access.

One deliberate comparison

Question: Will seedlings started three days apart be the same height on one observation date? Label separate pots A1–A3 and B1–B3. Sow three beans individually for group A. Sow group B three days later. Use the same variety, pot size, mix, light position, care and measuring method. Select one common date after both groups have started.

Record what happened

Record each actual sowing date and plant ID. Measure vertically from the soil surface to the top of the shoot in centimetres, using the same starting point. If there is no visible shoot, record 0 cm. Record when a non-geminated seed is observed. Do not fill future dates or invent successful growth. Follow one plant over time for dated observations.

Care remains part of the method

Use a consistent suitable watering routine and rotate/check positions consistently. Keep all living plants cared for; never create a deprived group. Review trays, spills, mould and plant health as part of normal school care. Adults handle unsafe material. No seed tasting; wash hands after handling pots.

What this comparison can show

Describe the six plants and this observation date. Sowing time is an intended difference, but individual seeds can vary. Three plants in each group offer more evidence than one, without proving what every bean will do. Discuss any accidental differences and repeat later observations if appropriate.

Animal learning

Use the supplied original illustrations and verified species/stage information. Do not collect, hatch or rear unknown wildlife or disturb nests. Observe safely from a distance. Images are selected-stage models; undated pictures do not establish exact duration or prove all animals follow one cycle.

Using the resource pages

Displays and case cards

D1 introduces six key ideas. D2 contrasts the butterfly and chicken sequences. C1a/C1b contain eight numbered cases: C01 seed; C02 seedling; C03 new bean seeds; C04 butterfly egg; C05 caterpillar; C06 chrysalis; C07 adult butterfly; C08 chicken comparison. Present full pages or cut the eight cards along their clear borders.

Worksheets and answers

W01–W10 each have an immediately following matching answer page. Keep learner pages and answer pages separate during tasks. Red answers are models; accept scientifically sound alternatives and personal observations. Do not use the model answer as a script every student must copy.

Actual observations

W06 and its answer companion deliberately leave actual data cells, dates and drawings blank. Copy/reuse W06 for each student or observation period. Keep plant IDs consistent. The practice heights in Lesson 1 are invented examples for method discussion, not class results.

The Evidence Trail game

Use G1a rules, G1b six-stop board and G1c eight challenge cards together. Prepare one set and counter per small group. Follow Notice → Ask → Compare → Explain → Apply → Reflect. All players contribute; the group reaches FINISH TOGETHER after all six stops. Use the criteria on the next page to guide feedback.

Assessment and rubric

A1a is an explanation organiser. A1b records supporting reasons and a kitten transfer example. Use both pages or an equivalent oral/demonstrated conference with the same prompts. R1 provides four dimensions and three progress descriptions. The separate quiz of 10 questions has an matching answer slides.

Easy preparation

Print the selected lesson pages in black and white. Displays/cards/game pages are in colour. Prepare the eight case cards, three game pages and relevant worksheets before the lesson; a board, cut cards, pencil and counter are sufficient for the game.

Game discussion criteria

Facilitation

Read the rules and work through the example turn before play. Students explain or point to evidence; partners ask one useful question. If an answer is incomplete, give feedback and invite a revision before the group moves to the next stop. No racing, elimination or movement-only scoring.

Card 1 – Notice

C02 shows roots and a shoot developing; the young plant grows. Accept a specific visible change with a clear reference to the illustration.

Card 2 – Explain

No. The butterfly has a chrysalis/pupa (C06); the chicken sequence has egg, chick, juvenile and adult without a pupa (C08). One counterexample disproves “every”.

Card 3 – Compare

Mature bean plants can produce new seeds in pods (C03). Adult butterflies can lay eggs (C09). Both can produce a new generation, through different structures/stages.

Card 4 – Ask

Accept a safe observable question, a prediction with a clue and relevant evidence. For example, dated records of when a bean root and shoot appear. Predictions are not recorded results.

Card 5 – Explain

Egg → caterpillar → chrysalis → adult butterfly → new eggs. The caterpillar feeds and grows; the organism changes inside the chrysalis before the adult emerges.

Card 6 – Apply

Use verified pictures/records with specific stage labels, or observe wildlife without disturbing it. Leave wild eggs, nests and organisms in place.

Card 7 – Reflect

A stage picture can show visible structure and support an order. Without dates or repeated observations, it cannot show exact timing, duration or that one pictured organism was observed across all stages.

Card 8 – Compare

Change sowing date by three days. Keep variety, pot, mix, light, care and measuring method alike, then measure both groups on one common date. Check actual evidence and any accidental differences.

Assessment and feedback

Prepare a fair opportunity

Students use the bean and butterfly cycles and supporting evidence from their work. A1a organises classification, the two ordered cycles and a dated observation or named model. A1b asks for a comparison, question/prediction, safe method, evidence, a useful limit/further check, kitten transfer and a supported care message. Read prompts aloud and allow different communication methods.

Conference prompts

Ask the student to explain the order, where a new generation begins and how the evidence supports the claim. Then ask one comparison, one counterexample or transfer question, and one method/limitation question. Use A1 pages, W09 and the dated record or named model; do not infer knowledge from a neat drawing alone.

Use Rubric RI

Judge the four exact dimensions: Understanding, Evidence and method, Explanation and evidence and reflection. Choose the most representative of the three progress descriptions: Supported / incomplete, Independent / supported or Justified / transfer. Record the evidence used. Do not average away a misconception. Identify the misconception. Consider idea to revisit. Supports change access to the task, not the scientific criterion.

Expected transfer

A kitten is already living and grows into an adult cat; an adult cat later produces a new generation of kittens. It does not have a butterfly pupa. This is a cat example, not a claim that every mammal gives birth to live young: monotremes lay eggs. Source: Australian Museum, Mammals

Targeted feedback

If stages are out of order, revisit C06/C08 and distinguish growth from reproduction. If “all animals have a pupa” appears, compare C06/C08. If invented dates appear, return to actual records and identify models honestly. If the care claim is unsupported, which observation or source could justify it.

Quiz use

The separate 24-slide quiz has a cover, access/instructions slide, ten question/answer pairs, reflection and closing. Try each question before revealing its answer. Use flexibly for retrieval or a discussion check; retain the richer explanation and evidence conference for final judgement.

Answer-page guidance

W01-W02 – Classification

Use several clues and an example's origin. A bean plant/butterfly is living; a wooden spoon/dead dry leaf is once living; a toy car/rock is never living. A leaf on a growing plant is part of a living plant. Movement alone is insufficient. Accept equivalent reasons and safe observation questions.

W03-W05 – Stages and planning

Bean: seed → seedling → growing plant → flowering plant → pods with seeds → new generation. Butterfly: egg → caterpillar → chrysalis → adult → new eggs. The W04 prediction is tentative and must be checked, not scored as a promised result. Students may make a different justified prediction.

W06 – Your class evidence

There is no fixed correct observation dataset. Accept dated records with plant IDs, a consistent starting point/unit and truthful visible changes. Keep future rows blank. Use the red criteria to discuss method; do not copy them as measured results or fabricate drawings.

W07-W08 – Comparisons and counterexamples

Both organisms grow and can reproduce, but the structures and stages differ. Beans produce seeds in pods; butterflies lay eggs and have a pupa. Chickens have no pupa stage. A stage model selects information and may omit exact timing and other details.

W09-W10 – Personal reasoning

Red statements are example responses. Leave evidence checkboxes for the student's actual work. Accept another supported claim, accurate similarity/difference, logical limitation, next question, safe care recommendation and named observation/source. Keep the red criteria in mind when student points, speaks, dictates or demonstrates.

Assessment models

A butterfly adult can lay eggs to begin a new generation; a bean plant can produce new seeds. A kitten grows into an adult cat and has a pupa. Seek a different explanation and source/observation link, rather than one exact sentence. Refer to R1 for program descriptions.

Sources and teacher links

Australian Museum – Metamorphosis: a remarkable change

Butterfly egg, larva/caterpillar, pupa/chrysalis and adult stages; not all insects have complete metamorphosis. Used for original paraphrased stage explanations and illustrations.

<https://australian.museum/learn/animals/insects/metamorphosis-a-remarkable-change/>

Botanic Gardens of Sydney – Life cycle of flowering plants

Flowering-plant stages and the bean time-lapse teacher resource. Used for original paraphrased growth, flowering and seed-generation explanations.

<https://www.botanicgardens.org.au/teachers-and-schools/teacher-resources/primary-learning-resources/cumberland-plain-woodland/life>

Australian Museum – Mammals

Most mammals bear live young; monotremes lay eggs. Used for the carefully bounded kitten, koala and kangaroo example.

<https://australian.museum/learn/animals/mammals/>

Image and teaching credits

All student resource pages and diagrams are original generated educational illustrations. Official photographs, diagrams and logos from these sources are not reproduced. Illustrations simplify selected stages and are not photographs, exact-size comparisons or measured class records. Source-specific pages/sites include visible source credits.

Using public links

Teacher links provide optional background; no membership or third-party paid resource is required to use this unit. Check links before class and supervise online access to the primary bean investigation, resource cards and native slides provide the teaching sequence.

Lesson 01 – What counts as living

Learning goal

Classify an organism or object using several clues, rather than movement alone.

Materials and preparation

A bean plant, a butterfly picture, a toy car and wooden spoon or safe pictures; D1; C01–C07; W01. Use a living plant already established by the teacher. Keep cut plants distinct from whole organisms. Prepare object photographs when safe samples are unavailable.

8 minutes – Retrieve and question

Show the four examples without labels. Ask which might be living and what evidence would help. Accept a prediction and one question before teaching.

12 minutes – Explicit model

A living bean plant grows and uses water and energy. Adult butterflies reproduce. A battery-powered toy car moves but has no living life cycle. A wooden spoon came from a tree, so classify it as once living. Explain that one clue alone cannot decide.

25 minutes – Guided then independent sort

Model the plant classification, then pairs discuss the butterfly and toy. Each student completes W01 or demonstrates the same sort with pictures. Ask for two clues for a living example and one reason for a non-living example.

10 minutes – Evidence explanation

Compare reasons. Revisit a movement-only explanation using the plant and moving toy. Students revise a classification when evidence warrants it.

5 minutes – Exit and care

Ask each student to classify the spoon and explain its origin. Return samples, keep living plants watered appropriately and wash hands.

Support and assessment

Offer a picture board and the spoken frame "I classify ____ as ____ because ____." Allow pointing to clues, a communication device or dictation. Remove the reason requirement.

Further challenge

Explain why a stationary seedling and a moving toy show that movement alone is an unreliable test.

Evidence to collect

Initial sort, explanation using more than movement, and an observation question.

Lesson 02 – Once living

Learning goal

Distinguish living, once-living and never-living examples by their origin and evidence.

Materials and preparation

Plant with attached leaf, dry fallen leaf, rock, wood sample or photographs; W02; D1. Use known dead, dry plant material, not a recently cut green leaf whose cells may remain alive. Do not ask students to collect unknown plants or wildlife.

8 minutes – Retrieve

Revisit the moving toy and stationary plant. Ask what the wood in a spoon used to be.

12 minutes – Model tricky cases

Contrast a leaf attached to a growing plant, a dead dry leaf and a rock. A dead leaf is no longer living but came from a living plant. A rock was never an organism. Ask for origin and evidence rather than appearance alone.

25 minutes – Analyse and justify

Pairs discuss four cases on W02. Students give a category and reason. Present a fictional mistaken claim that a dry leaf has always been never living. Ask students to revise it using its origin.

10 minutes – Data changes explanations

Compare a claim before and after learning that a wooden object came from a plant. Explain that scientists update explanations when evidence changes. Record the new reason.

5 minutes – Exit

Ask for a difference between a dead leaf and a rock. Clean tables and wash hands after sample handling.

Support and access

Use pictures paired with category words and read prompts aloud. An adult can scribe the student's own reasoning.

Further challenge

Explain why a recently picked green leaf is a tricky example and why the teacher chose an obviously dead dry leaf.

Evidence to collect

W02 reasoning and a revised explanation linked to new origin evidence.

Lesson 03 – Life-cycle questions

Learning goal

Explain a life cycle as growth and reproduction across generations and ask an investigable question.

Materials and preparation

C01–C08; D1; W03; stage cards or teacher-made labelled card arrangements. Keep seed-to-new-seed and egg-to-new-egg links visible. Say that simplified diagrams omit details and show selected stages, not equal intervals.

8 minutes – Retrieve

Ask how a young bean plant changes as it grows and how a butterfly starts life.

12 minutes – Model a repeating cycle

Use C01–C03 to explain seed, seedling, growing plant, flowering adult and pods with new seeds. Link a new seed to the next generation. Contrast growth of one plant with reproduction that continues the cycle.

25 minutes – Ask and predict

Pairs order the supplied stages. Model "What changes first when a bean seed begins to grow?" Student ask one question that can be observed safely, predict from a stage clue and identify evidence needed to check.

10 minutes – Explain evidence

Share a question, prediction and how it could be checked. Do not grade prediction but whether it matches an unobserved result. Discuss when pictures over time are needed.

5 minutes – Exit

Explain why the last stage links to another generation. Keep stage cards for later comparisons.

Support and access

Provide stage pictures, a partially ordered sequence and a question frame. Students may select a question and explain it orally or with partner-support choices.

Further challenges

Distinguish a question about stage order from a question about how long a change takes. Explain the evidence each needs.

Evidence to collect

Ordered cycle, distinction between growth/reproduction, and one question with an evidence plan.

Lesson 04 – Plant cycle

Learning goal

Represent a bean life cycle and plan a safe, scaffolded comparison with one deliberate change.

Materials and preparation

Six untreated beans of one variety, six labelled pots, damp potting mix prepared by an adult, tray, ruler; C01–C03; W04; W06. Adults handle potting mix, dampen dust and check seed/allergy restrictions. Never taste seeds. Label A1–A3 for a first sowing date and B1–B3 for three days later. Give all plants appropriate daily care in the same safe light.

8 minutes – Retrieve and predict

Recall seedling, mature plant and new seeds. Ask whether seedlings started three days apart will be the same height on one chosen date. Record predictions with reasons.

12 minutes – Model stages and controls

Order the five bean stages. Plan the start-date comparison: change only sowing date; keep variety, pot size, mix amount, water-care method, light and measurement method alike. Use three seeds per group, cause sowing date to vary.

25 minutes – Set up safely

Students label pots and observe seeds without eating them. Teacher supervises sowing group A. Schedule group B three days later. Draw a seed and complete W04. Prepare W06 records. If live growing is unsuitable, practise planning only and analyse clearly labelled secondary or illustrative records later.

10 minutes – Check the method

Ask what changes, what stays alike, what will be measured and how. Explain why a start-date comparison does not prove how every bean grows.

5 minutes – Care and clean

Return pots to the tray, clean surfaces and wash hands. Assign adult-supervised daily care. Keep observations across days or weeks, with no promised outcome date.

Support and success

Use a five-stage picture strip, pre-written labels and a partially completed planning chart. Provide an accessible measuring partner without giving the explanation.

Further challenge

Explain why comparing different varieties in different pot sizes would make the result hard to interpret.

Evidence to collect

Correct cycle and a recorded question/prediction, change, controls, timing and safe method.

Lesson 05 – Animal cycle

Learning goal

Order butterfly stages accurately and choose an ethical method for observing animal change.

Materials and preparation

C04–C08; W05; teacher–selected stage pictures or D2. No live animal collection. Use secondary–source stage evidence. Do not collect eggs, disturb nests or hatch/rear wildlife. Prepare a picture–based method with species and observation dates labelled when known.

8 minutes – Retrieve

Recall that a bean cycle continues through new seeds. Ask how a butterfly cycle continues.

12 minutes – Model butterfly stages

Teach egg, larva/caterpillar, pupa/chrysalis, adult butterfly and new eggs. Explain that growth is clearest in the caterpillar stage. A pupa is living even when still. Do not label the chrysalis a cocoon or show an adult hatching from an egg.

25 minutes – Order and annotate

Pairs order C04–C07, then independently draw/label W05. Add what changes at the caterpillar and pupa stages. Plan a safe picture comparison: use the same species, clear stage labels, source/date where known and the same stage criteria.

10 minutes – Method and evidence discussion

Ask why photographs or verified illustrations are useful when a case takes weeks or animals must be protected. Distinguish actual recorded dates from a general stage illustration. Note a limitation of an illustration.

5 minutes – Exit

Explain which stage comes between caterpillar and adult, then describe one welfare–safe observation choice.

Support and access

Offer four separate stage pictures and word labels. Students can point in order and describe change using speech, pictures or dictation.

Further challenge

Explain why a still chrysalis is living and why different animal species should not be combined into one claimed life cycle.

Evidence to collect

Ordered and annotated butterfly cycle, stage vocabulary, ethical observation plan and evidence limitation.

Lesson 06 – Observe over time

Learning goal

Record dated observations in centimetres and distinguish actual data from an illustrative practice set.

Materials and preparation

Class bean plants where available; ruler with centimetres; W06; pencil; optional photographs with known dates. Use the agreed start-date comparison from Lesson 4. Measure from the soil surface to the top of the shoot using the same method. Keep real records blank until observations occur.

8 minutes – Retrieve

Review sowing dates and predictions. Ask what evidence could show change since the last observation.

12 minutes – Model consistent records

Demonstrate plant ID, date, height in centimetres and a feature note or dated drawing. Put zero for a shoot not yet visible. Teach the illustrative values 2, 4 and 6 cm on days 7, 10 and 13 as invented practice data, not a real result.

25 minutes – Observe and represent

Students record actual measurements on W06 using the same ruler method. Repeat records over 10 days. Compare two dated records. Make a simple labelled column graph on squared paper or orally interpret a teacher model, keeping units and data origin visible.

10 minutes – Explain and evaluate

Ask students to state a change supported by dates and measures. Compare records from A/B on a common date without claiming age and growth rate are the same. Discuss a bent shoot as a starting point or missing record as a limitation.

5 minutes – Exit

State the unit of measurement and date to keep the method consistent. Clean up and maintain plant care.

Support and access

Use a ruler demonstration and pre-labelled plant IDs. A partner may hold the ruler while the student reads or selects the value. Accept a dictated feature note.

Further challenge

Explain why one tall plant does not prove that its entire group grows faster. Suggest a useful repeat observation.

Evidence to collect

Dated table with plant IDs and cm, a matched representation, evidence-based change and one method limitation.

Lesson 07 – Compare cycles

Learning goal

Use the same criteria to compare bean and butterfly cycles and support a conclusion.

Materials and preparation

C01–C07; W07; class observation records; D2; board or large paper. Prepare a comparison with stage names, growth, reproduction and evidence. Keep real observations and stage models visibly separate.

8 minutes – Retrieve

Recall the two ordered cycles. Ask what must be common for a comparison to be useful.

12 minutes – Model a comparison chart

Use the same criteria for both organisms. Both grow and can reproduce. Beans form seeds in pods; butterflies lay eggs and have a pupa stage. Compare stage changes, not simply colours or number of pictures.

25 minutes – Build and explain

Pairs assemble cycles from the cards. Students complete W07 with two similarities, differences and a reasoned conclusion. Use a dated observation to describe bean growth and a verified stage model for butterfly changes. Identify each source type.

10 minutes – Evaluate explanations

Present a claim that the cycles are identical because both have a pupa stage. Students defend it with an explanation supported by stage evidence. Ask what an extra observation could clarify.

5 minutes – Exit

State a similarity, difference and one source limitation.

Support and access

Provide common criteria labels and one completed row. Students can arrange pictures and dictate a conclusion without copying a full paragraph.

Further challenges

Explain why equal numbers of diagram pictures do not mean equal timing or identical stages.

Evidence to collect

Matched comparison criteria, accurate common/different features and conclusion with source evidence/limit.

Lesson 08 – Explain exceptions

Learning goal

Challenge a universal stage claim using butterfly, chicken and mammal examples and apply a useful limit.

Materials and preparation

C04–C08; W08; D2; simplified kitten-to-adult example grounded in the Australian Museum mammal reference. Use animal pictures/models only. This bounded extra mammal teaching example fulfils the approved insect/mammal comparison. Do not claim all mammals give birth to live young: monotremes lay eggs.

8 minutes – Retrieve

Ask whether every animal has a chrysalis stage. Collect reasons before showing another cycle.

12 minutes – Contrast examples

Revisit butterfly egg, caterpillar, chrysalis, adult. Compare chicken egg, chick, juvenile, adult, new egg. Then explain kitten growth into an adult cat whose offspring are born as kittens. Neither chicken nor cat has a long-term pupa stage.

25 minutes – Correct and apply

Students correct the claim "All animals have a pupa stage" on W08 using C04 and butterfly evidence. Discuss a fictional care problem: an adult wants to rear unknown wild eggs. Recommend verified pictures and leaving wildlife undisturbed, explaining both benefit and evidence limit.

10 minutes – Transfer and limitations

Ask students to explain why an unfamiliar animal should be checked rather than given the butterfly labels. A simplified model is useful for selected stages but omits details and exact duration.

5 minutes – Exit

Give a counterexample to the pupa claim and one safe claim justified by the science.

Support and access

Supply the butterfly/chicken stage pictures and sentence frame "The claim is incorrect because ____." Accept picture selection plus an explanation.

Further challenge

Explain why knowing the chicken exception still does not tell us the exact stages of every animal.

Evidence to collect

Corrected claim with a counterexample, model limitation and evidence-based welfare-safe recommendation.

Lesson 09 – Life-cycle conference

Learning goal

Independently justify classifications, compare two cycles and explain observation evidence and a limitation.

Materials and preparation

Student W01–W08 portfolio; W09; A1a–A1b; R1; stage cards; rulers/records for a method demonstration. Prepare short paired/small-group explanations and teacher checkpoints. Offer a short recording, drawing with dictation or supported demonstration. Do not assess public-speaking confidence.

8 minutes – Retrieve criteria

Review classification reasons, ordered cycles, comparison evidence and a limit. Make the learning expectations explicit.

12 minutes – Model evidence explanation

Model a short claim–evidence explanation, without supplying the assessment answers for the individual task. Distinguish a remembered label from a reason supported by records. Show how to refer to the existing portfolio.

25 minutes – Independent assessment

Students use W09 as a readiness check and complete A1a with their own classification and a butterfly cycle representations. Complete A1b or an equivalent explanation/recording. Teacher checks individual contributions, question/prediction, measurement/method and a transfer to the kitten/cat example.

10 minutes – Conferences

Use A1b prompts and R1 to record evidence. For larger classes collect brief responses during the task block and combine them with previously observed inquiry evidence.

5 minutes – Reflect

Students name a claim they can support and a question to open. Identify any specific teaching follow-up.

Support and access

Provide stage vocabulary, pictures and read prompts aloud. Adults may scribe the student's words. A communication mode or support for physical access does not lower achievement.

Further challenge

Use the kitten/cat transfer comparison to explain why a universal pupa–stage claim fails, then propose a useful further observation.

Evidence to collect

Individual assessment across classification, cycles/comparison, inquiry evidence, method, limitation and transfer.

Lesson 10 – Care and communicate

Learning goal

Use life-cycle evidence to recommend responsible care and explain how science helps solve a practical need.

Materials and preparation

W10; existing observations; A1b if a final response is outstanding; Botanic Gardens of Sydney teacher-viewing link; optional D2/G1. Prepare the real seed-bank example in teacher wording. No collection of native seed or wildlife is required. Use existing work rather than commissioning a second exhibition.

8 minutes – Retrieve evidence

Recall one observation and one difference between cycles. Ask how evidence could help us care for living things.

12 minutes – Model responsible use

Use the class bean care method to connect appropriate water/light, consistent recording and a practical care decision. Describe the Australian Botanic Garden seed-bank example: scientists collect/store seed to help threatened plants regenerate. This is named source information, not a class investigation.

25 minutes – Communicate for an audience

Students use W10 to recommend one safe action for a classroom garden. In groups, explain their evidence, identify a limit and pose a next question. Share briefly in pairs or accessible small groups. Complete any individual assessment explanation from existing evidence.

10 minutes – Evaluate and revise

Partners ask one respectful evidence question. Students revise explanation if necessary. Explain how data changes an idea and why science is useful without promising every seed will grow.

5 minutes – Close response

Summarise growth, reproduction, varied cycles and evidence use. Assign continued plant care or a responsible handover after the unit. Avoid releasing unknown organisms or collecting wildlife.

Support and success

Use an audience choice question picture bank and the frame "I recommend ____ because our evidence shows ____." Accept supported spoken/drawn responses.

Further challenge

Explain a limit of the care recommendation and what additional evidence would help in a different species or setting.

Evidence to collect

Specific audience, justified care action, source/evidence origin, useful limit, revised explanation and next question.

Life Cycle Detectives



Key Ideas - Year 3

Look closely. Notice changes. Find the patterns in life cycles!

Life cycle:

stages across generations.



Seed:

contains a young plant that can grow when conditions are suitable.



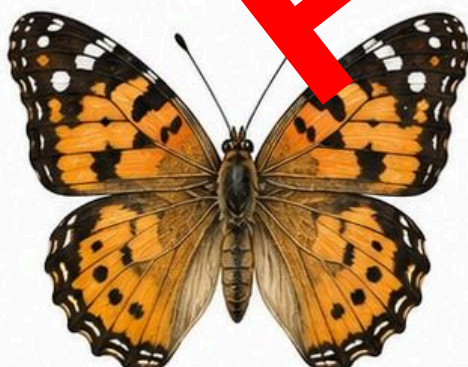
Seedling:

a young plant after germination.



Adult:

a mature living thing that can reproduce.



Reproduction:

producing a new generation.



Compare:

explain similarities and differences.



Bean
(plant)



Butterfly
(animal)

Growth changes one organism.
Reproduction continues the cycle.





How We Explain Our Evidence

Scientists ask questions, look for evidence and use the evidence to write an explanation.



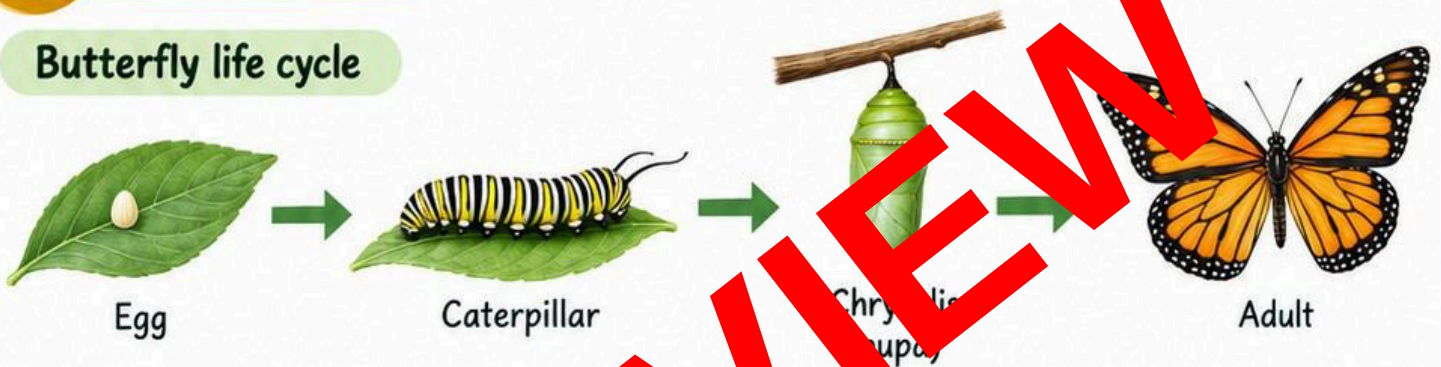
1 Question

Does every animal have a pupa stage?

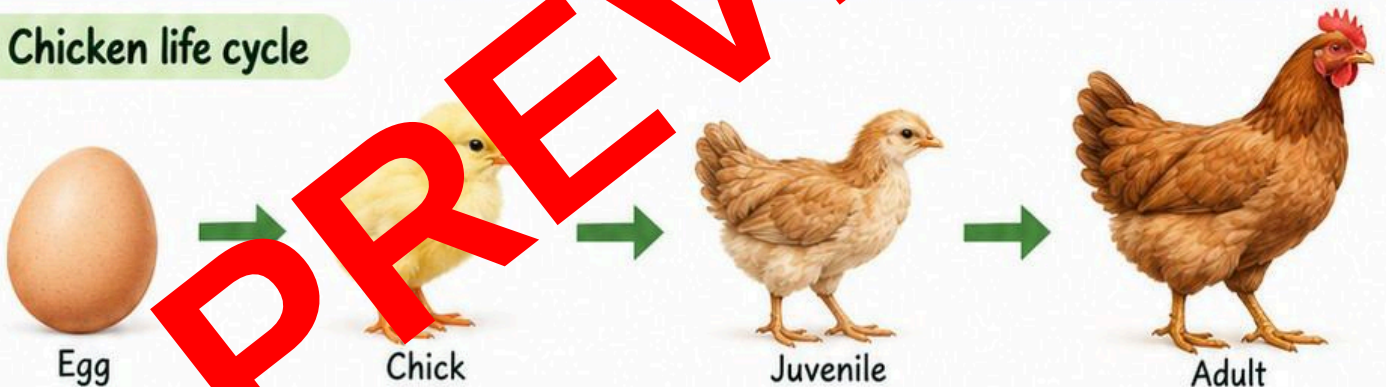
2 Evidence

We can look at the life cycles of different animals.

Butterfly life cycle



Chicken life cycle



3 Explanation

No. A butterfly has a pupa stage. A chicken does not.
Animal life cycles differ.



Which stages support the explanation?

Use the evidence above. Which stages support the explanation?
Be ready to share your ideas with your class.

What do you notice?
What does it show?





Case and Source Cards 1

Look closely. Use the clues. Discover life cycles!



C01

Bean seed

A seed contains a young plant. Suitable conditions can start germination.



C02

Bean seedling

Roots and a shoot develop. The young plant grows.



C03

New bean seeds

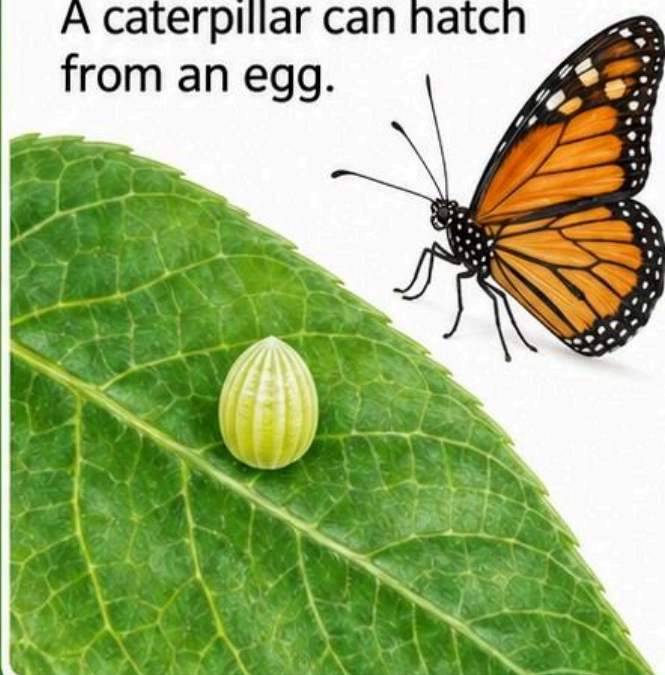
Flowers can develop into pods containing seeds. New seeds can begin another generation.



C04

Butterfly egg

An adult lays eggs. A caterpillar can hatch from an egg.





Case and Source Cards 2

Life Cycle
Detectives

Year 3 Science

C05

Caterpillar

The butterfly larva feeds and grows.



C06

Chrysalis

The butterfly changes inside its pupa. An adult emerges.



C07

Adult butterfly

The adult has six legs and can lay eggs for a new generation.



C08

Chicken comparison

Egg, chick, juvenile, adult, new eggs. No pupa stage.



Name: _____

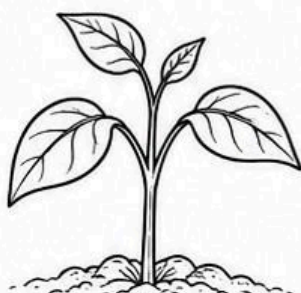
Date: _____

What counts as living?

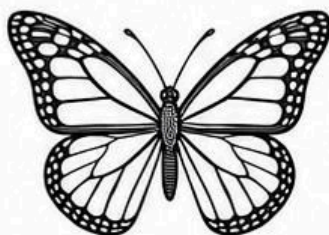
Use several clues. Movement alone is not enough.

1 Notice

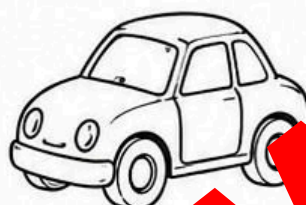
Look at the pictures below.



bean plant



adult butterfly



toy car



wooden spoon

2 Record

Complete the table. Choose a category from the bank and give evidence from the picture.

Category bank: living / once living / never living

Example	Category	Evidence
bean plant		
butterfly		
toy car		
wooden spoon		

3 Explain

Why can a still plant be living while a moving toy is never living?

A question I could observe: _____

What counts as living?

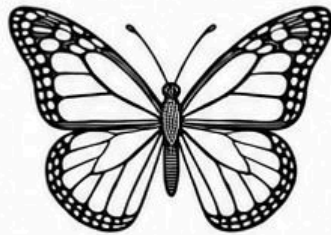
Use several clues. Movement alone is not enough.

1 Notice

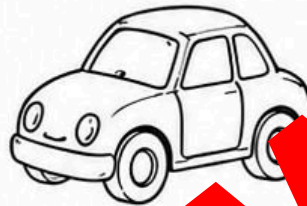
Look at the pictures below.



bean plant



adult butterfly



toy car



wooden spoon

2 Record

Complete the table. Choose a category from the bank and give evidence from the picture.

Category bank: living / once living / never living

Example	Category	Evidence
bean plant	living	grows and can produce seeds
butterfly	living	grows and can produce eggs
toy car	never living	moves through a push or power
wooden spoon	once living	wood came from a tree

3 Explain

Why can a still plant be living while a moving toy is never living?

Movement alone is not enough. A plant grows and has a life cycle.

A toy is powered or pushed.

A question I could observe: **What changes as our bean plant grows?**

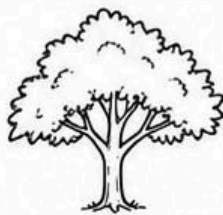
Name: _____

Date: _____

Once living

Model

Check where an example came from.



A tree is a living thing.



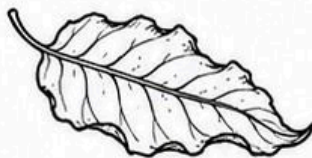
The wood came from the tree.
So the wood is once living.

1 Notice

Look at the objects. Read the labels.



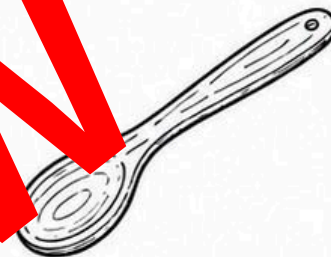
leaf on a growing plant



dead dry leaf



rock



wooden spoon

2 Record

Complete the table. Use the category bank.

Category bank:

living / once living / never living

Object	Category	Reason
leaf on a growing plant		
dead dry leaf		
rock		
wooden spoon		

3 Revise

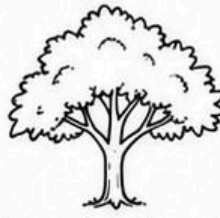
A student says: *The dead leaf was never living.*
Explain how its origin changes the claim.

One clue that helped me: _____

Once living

Model

Check where an example came from.



A tree is a living thing.



The wood came from the tree.
So the wood is once living.

1 Notice

Look at the objects. Read the labels.



leaf on a growing plant



dead dry leaf



rock



wooden spoon

2 Record

Complete the table. Use the category bank.

Category bank:

living / once living / never living

Object	Category	Reason
leaf on a growing plant	living	part of a growing plant
dead dry leaf	once living	came from a living plant
rock	never living	never an organism
wooden spoon	once living	wood came from a tree

3 Revise

A student says: *The dead leaf was never living.*
Explain how its origin changes the claim.

The leaf came from a living plant. It is now dead, so it is once living.

One clue that helped me: **Its origin.**

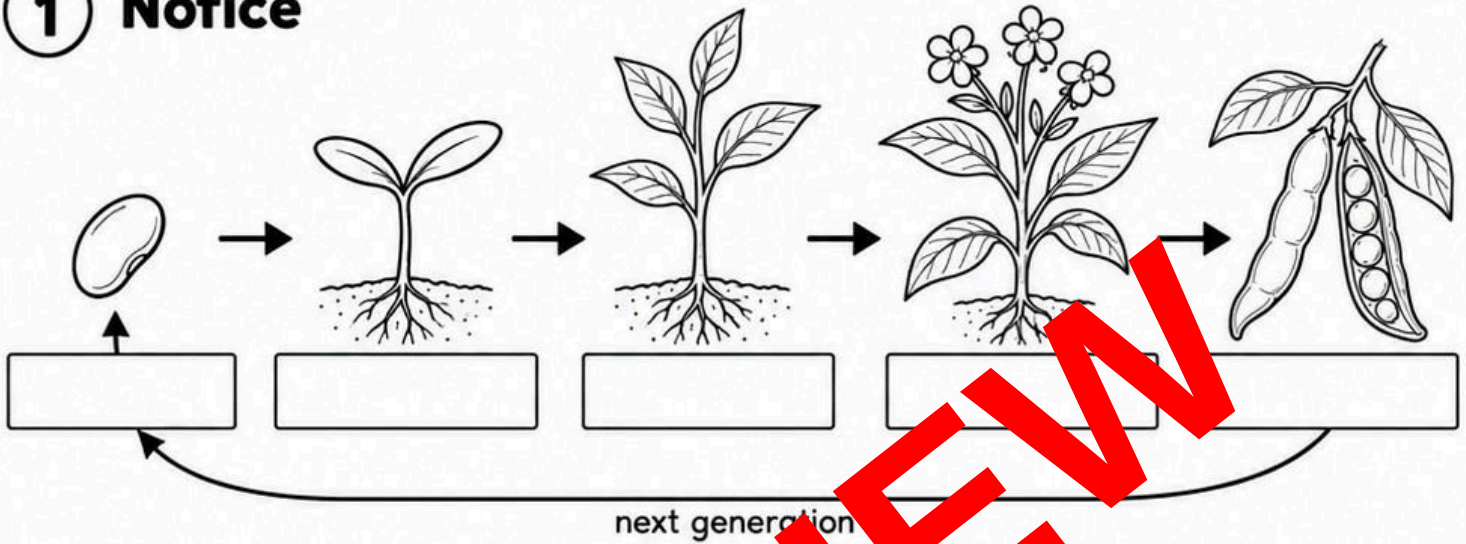
Name: _____

Date: _____

Life-cycle questions

A life cycle continues through new generations.

1 Notice



Word bank: seed seedling growing plant flowering plant pods with seeds

2 Ask and predict

My question: _____

My prediction and clue: _____

Evidence I would collect: _____

3 Explain

How is growth different from reproduction?

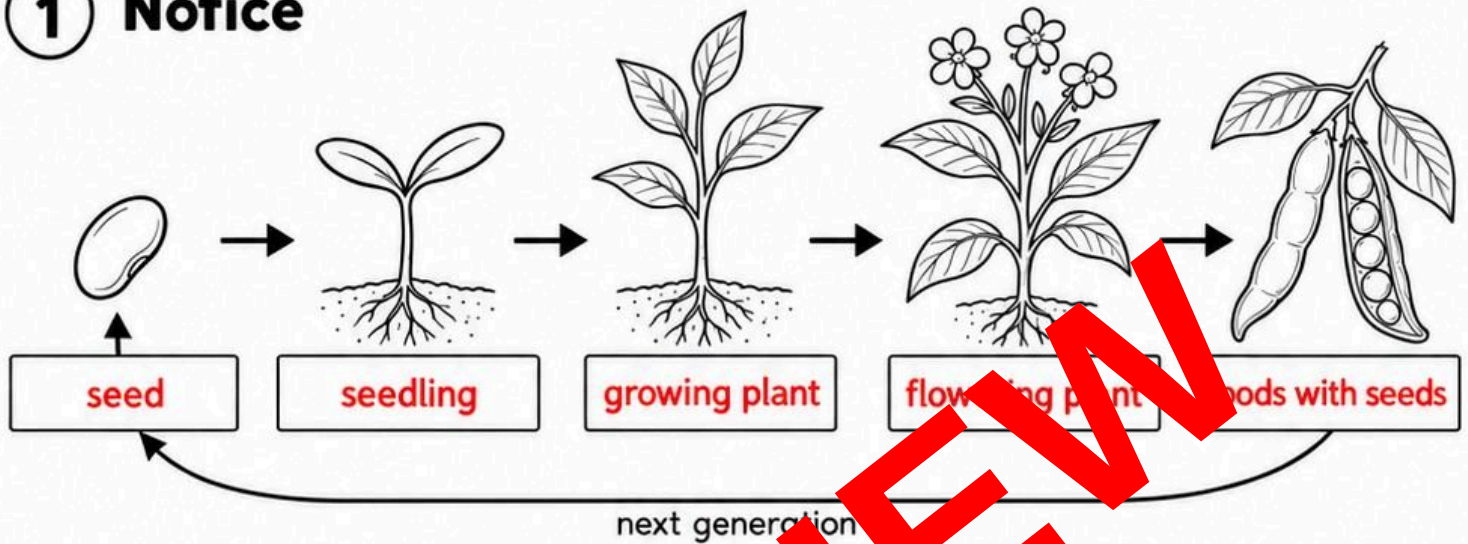
Name: **ANSWERS**

Date: _____

Life-cycle questions

A life cycle continues through new generations.

1 Notice



Word bank: seed seedling growing plant flowering plant pods with seeds

2 Ask and predict

My question: What appears first during bean germination?

My prediction and clue: I predict a root will appear first, from the stage example.

Evidence I would collect: Dated observations of the same seed.

3 Explain

How is growth different from reproduction?

Growth changes one organism. Reproduction produces a new generation.

Name: _____

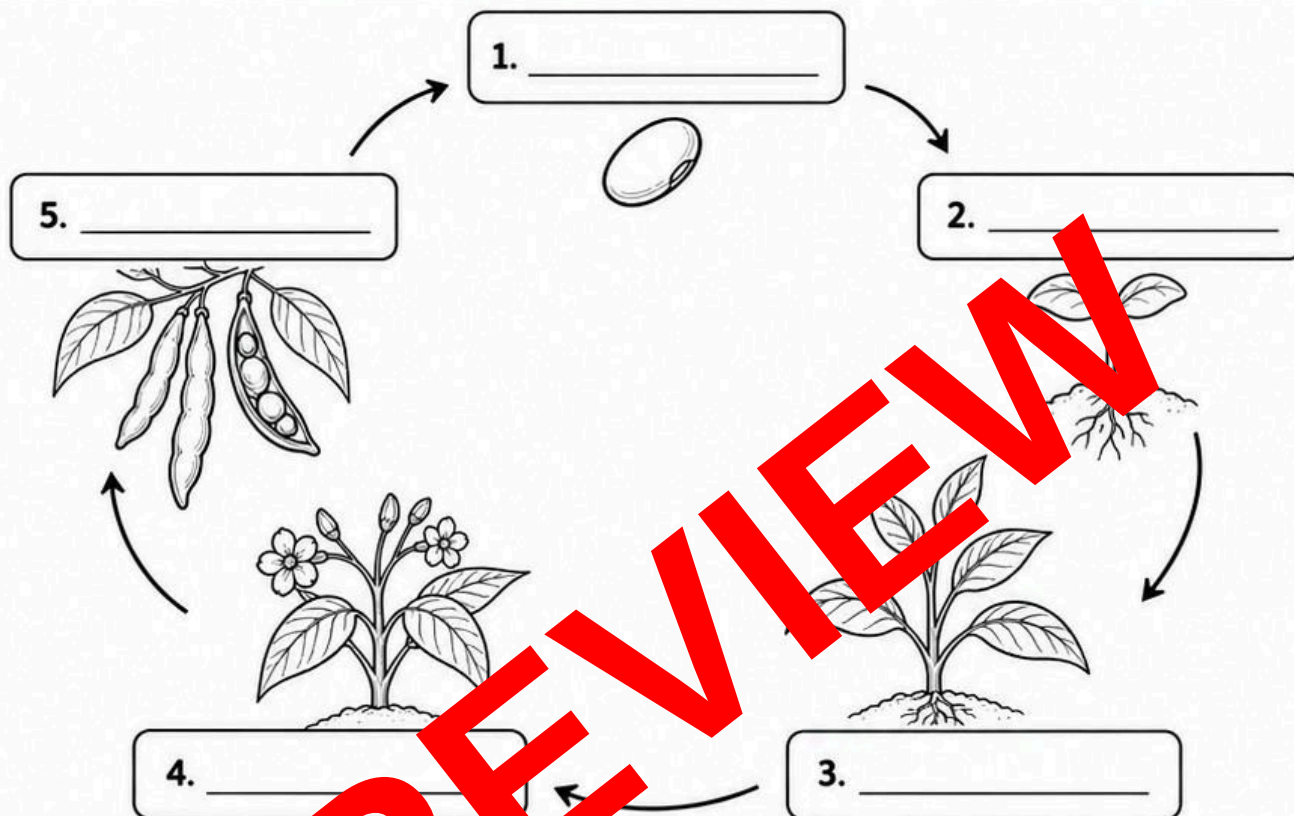
Date: _____

Plant cycle and comparison plan

1 Sequence

Use the word bank to label the stages of the plant life cycle. Write the correct word in each box.

Word bank: seed / seedling / growing plant / flowering plant / pods with seeds



2 Plan

Will seedlings started three days apart be the same height on one date?

My prediction and reason: _____

One deliberate change: _____

Things kept alike: _____

Common observation date: _____

3 Safe method

1. _____

2. _____

Safety: _____

Use three same-variety beans in each group. Care for all plants. Adults prepare potting mix. Do not taste seeds.

Based on: Botanic Gardens of Sydney, Life cycle of flowering plants.

Name: **ANSWERS**

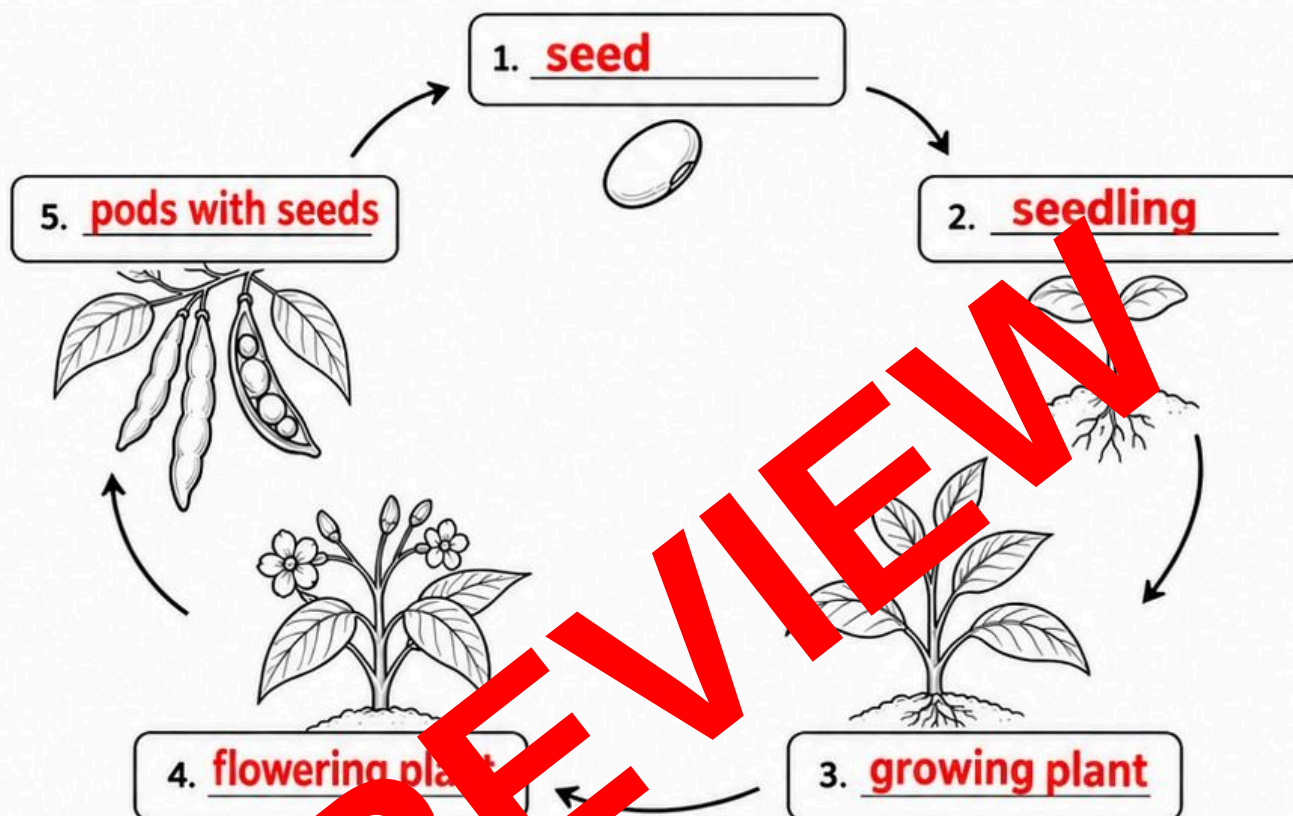
Date: _____

Plant cycle and comparison plan

1 Sequence

Use the word bank to label the stages of the plant life cycle. Write the correct word in each box.

Word bank: seed / seedling / growing plant / flowering plant / pods with seeds



2 Plan

Will seedlings started three days apart be the same height on one date?

My prediction and reason: **The earlier group may be taller because it has had more time. Test it.**

One deliberate change: **Sowing date: three days apart.**

Things kept alike: **Variety, pot, mix, light, care and measurement method.**

Common observation date: **Choose one date after both groups start.**

3 Safe method

1. **Label A1-A3 and B1-B3. Sow B three days after A.**
2. **Measure from soil to shoot top in cm on the same date.**

Safety: **Adult handles mix; wash hands; no tasting.**

Use three same-variety beans in each group. Care for all plants. Adults prepare potting mix. Do not taste seeds.

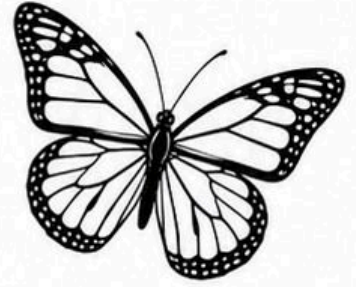
Based on: Botanic Gardens of Sydney, Life cycle of flowering plants.

Name: _____

Date: _____



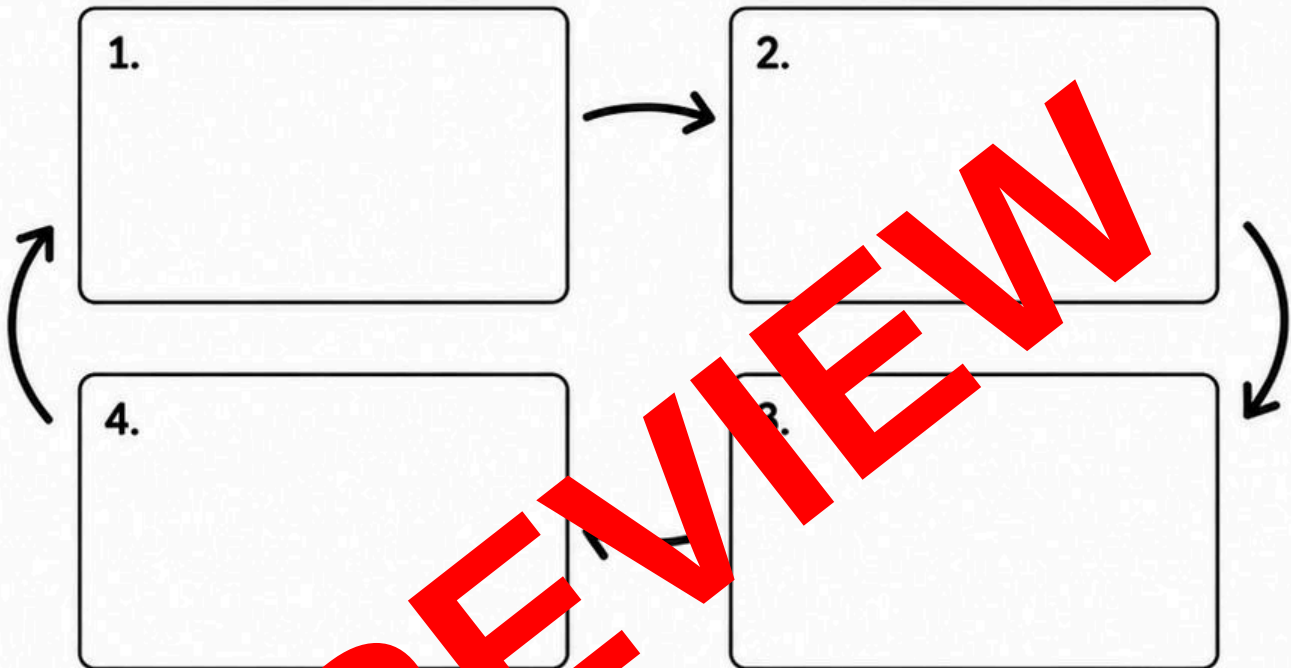
Animal cycle



1 Notice and order

Use the word bank to label and draw the stages of a butterfly's life cycle.

egg / caterpillar / chrysalis / adult butterfly



2 Explain changes

Write about what happens at each stage.

During the caterpillar stage:

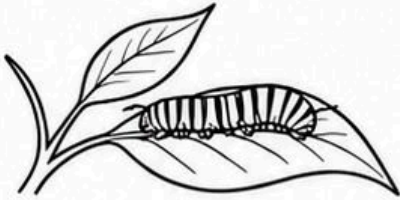
Inside the chrysalis:

3 Safe evidence

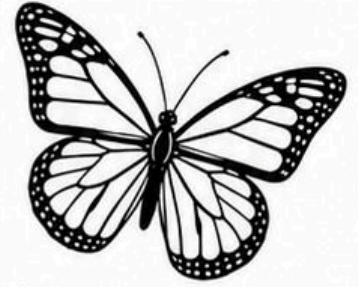
How can we study stages without collecting wild eggs? What is one limit of a stage picture?

Name: ANSWERS

Date: _____



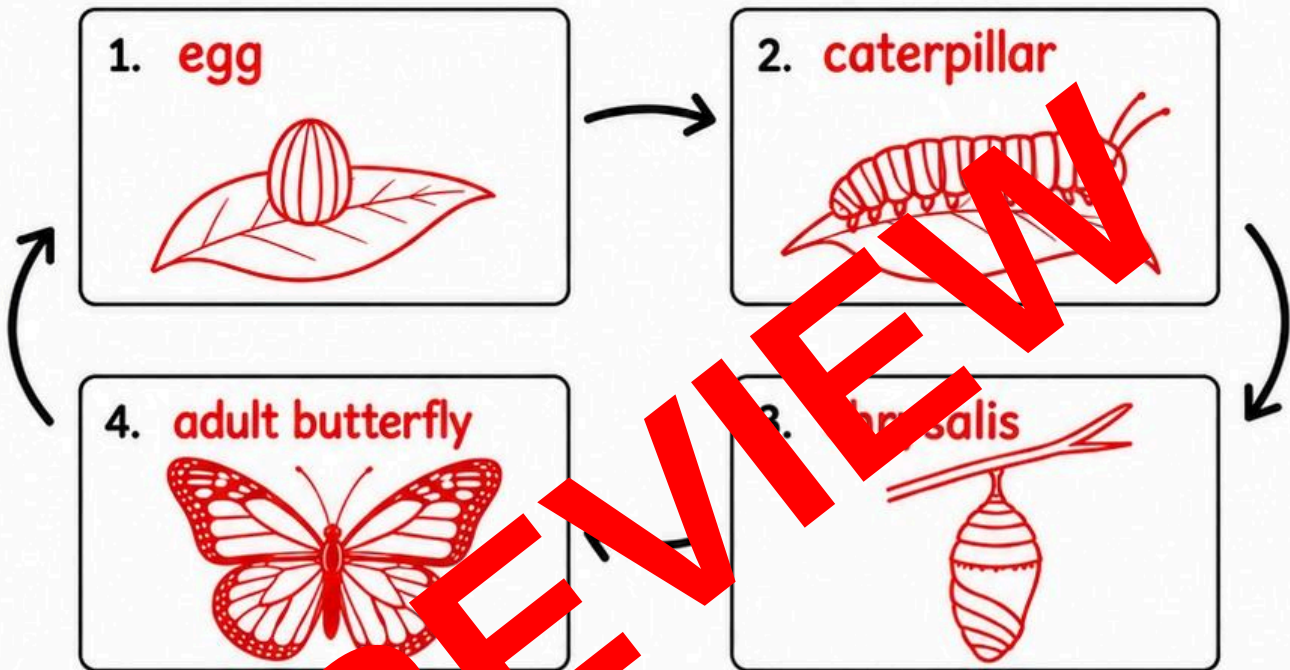
Animal cycle



1 Notice and order

Use the word bank to label and draw the stages of a butterfly's life cycle.

egg / caterpillar / chrysalis / adult butterfly



2 Explain changes

Write about what happens at each stage.

During the caterpillar stage:

The caterpillar feeds and grows.

Inside the chrysalis:

The organism changes before the adult emerges.

3 Safe evidence

How can we study stages without collecting wild eggs? What is one limit of a stage picture?

Use verified pictures with species/stage labels. An undated picture cannot tell us exact timing.

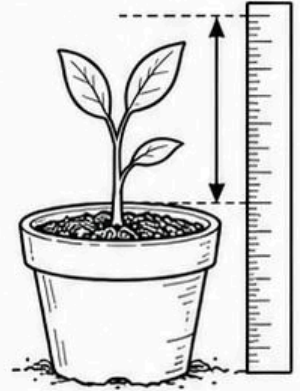
Name: _____

Date: _____

Observe over time

Life Cycle Detectives – Year 3

Careful observations help us notice changes as living things grow.



① Plan

Measure from the soil surface to the top of the shoot.

Our measurement unit: _____

Our comparison question: _____

② Record actual observations

Date	Plant ID	Shoot height (cm)	Visible change

Same plant, first date: _____

Same plant, later date: _____

③ Explain

Which dated evidence shows a change? What is one method limit?

Record only what you observe. If there is no visible shoot, record 0 cm. Leave future records blank.

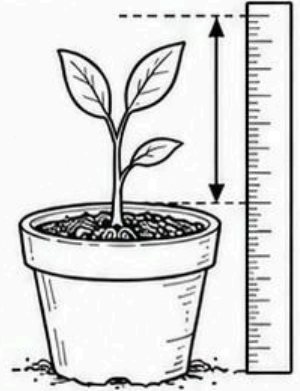
Name: **ANSWERS**

Date: _____

Observe over time

Life Cycle Detectives – Year 3

Careful observations help us notice changes as living things grow.



① Plan

Measure from the soil surface to the top of the shoot.

Our measurement unit: **centimetres (cm)**

Our comparison question: **Will plants started three days apart be the same height on one date?**

② Record actual observations

Date	Plant ID	Shoot height (cm)	Visible change

Same plant, first date: _____

Same plant, later date: _____

③ Explain

Which dated evidence shows a change? What is one method limit?

Use your own dated measurements.

Keep the same ruler starting point. One plant does not show every bean.

Record only what you observe. If there is no visible shoot, record 0 cm. Leave future records blank.

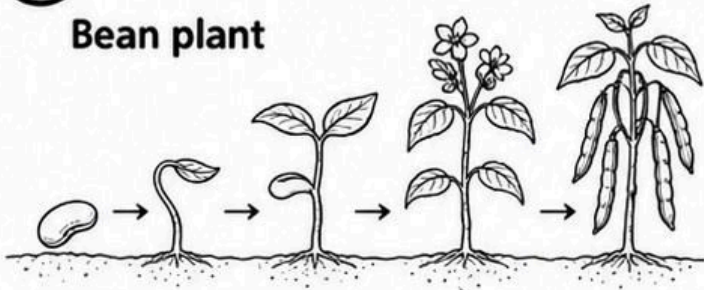
Compare cycles

Use the same criteria for both organisms. C01-C07.

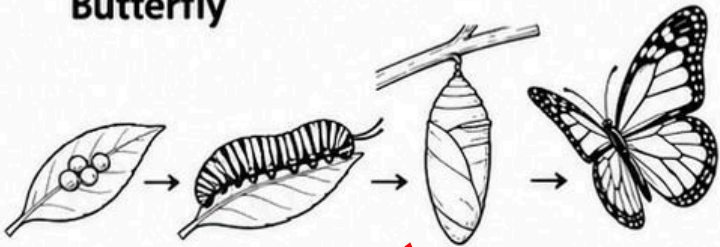
1

Notice

Bean plant



Butterfly



2

Compare

Criterion	Bean plant	Butterfly
Growth		
New generation		
Distinct stage		

One similarity: _____

One important difference: _____

3

Explain with evidence

My conclusion and the evidence I used:

One limit of my evidence: _____



Name: _____

ANSWERS

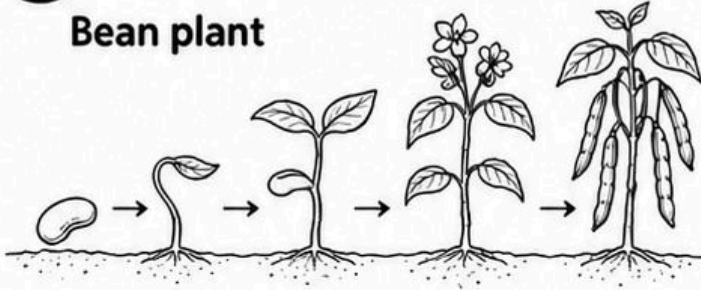
Date: _____

Compare cycles

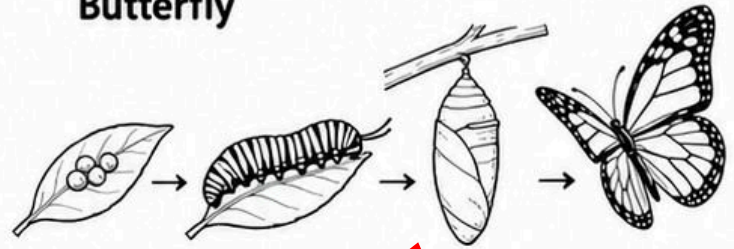
Use the same criteria for both organisms. C01-C07.

1 Notice

Bean plant



Butterfly



2 Compare

Criterion	Bean plant	Butterfly
Growth	seedling grows	caterpillar grows
New generation	new seeds in pods	new eggs
Distinct stage	flowering plant	chrysalis

One similarity: Both grow and can reproduce.One important difference: Beans make seeds; butterflies lay eggs and have a pupa.

3 Explain with evidence

My conclusion and the evidence I used:

Their cycles repeat, but the stages differ. C03 and C06-C07 show this.One limit of my evidence: A stage model does not show exact timing.

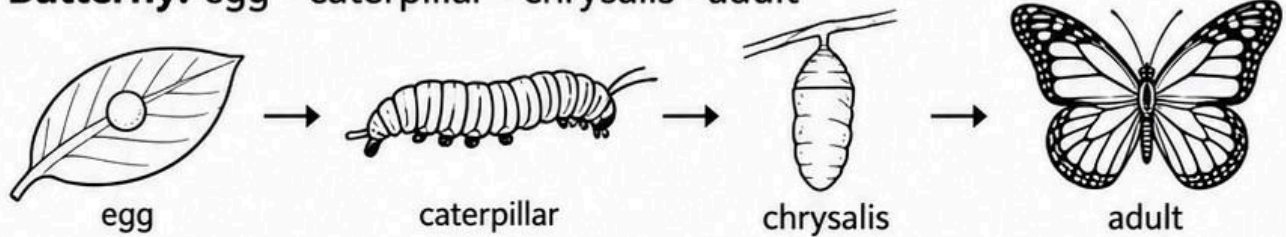
Name: _____

Date: _____

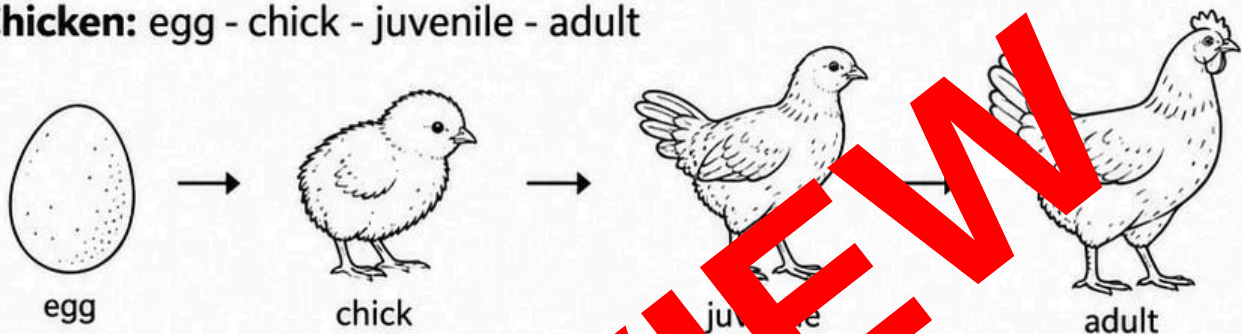
Explain exceptions

1 Notice

Butterfly: egg - caterpillar - chrysalis - adult



Chicken: egg - chick - juvenile - adult



2 Test a claim

Claim: Every animal has a pupa stage.

My correction and counterexample:

Evidence from COG and COS:

3 Apply and reflect

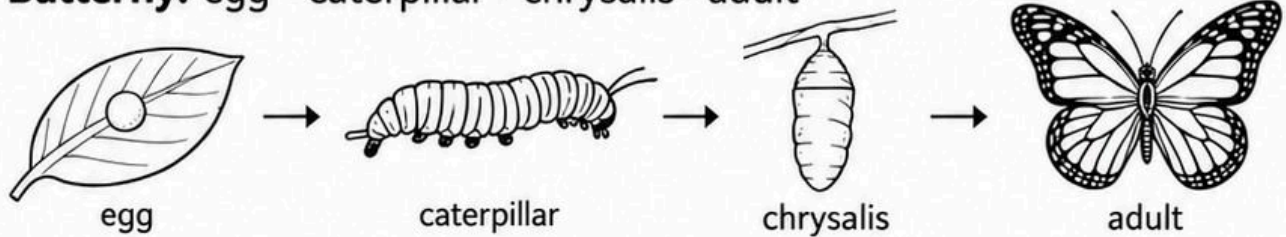
Someone wants to hatch unknown wild eggs. Suggest a safe way to learn instead.

One thing a simplified model does not tell us:

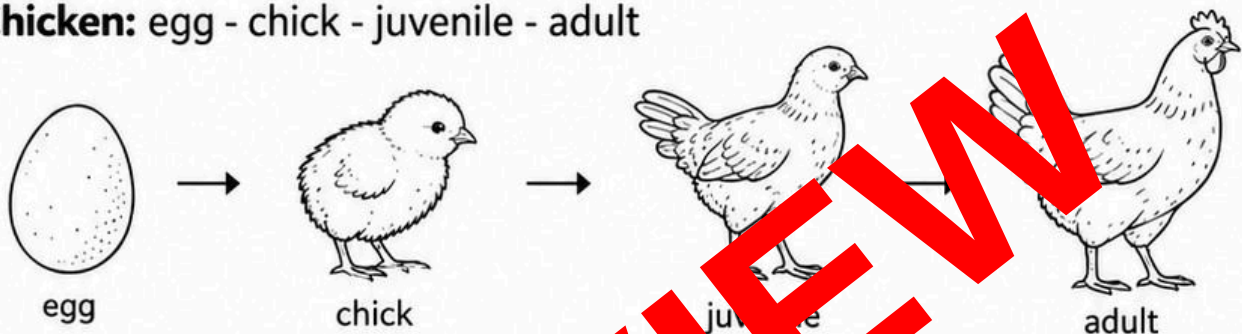
Explain exceptions

1 Notice

Butterfly: egg - caterpillar - chrysalis - adult



Chicken: egg - chick - juvenile - adult



2 Test a claim

Claim: Every animal has a pupa stage.

My correction and counterexample:

Some animal cycles have a pupa. The chicken cycle does not.

Evidence from C06 and C08:

C06 shows a butterfly chrysalis. C08 shows chicken stages without a pupa.

3 Apply and reflect

Someone wants to hatch unknown wild eggs. Suggest a safe way to learn instead.

Use verified pictures and leave wildlife undisturbed.

One thing a simplified model does not tell us:

A simplified model omits details and exact durations.

Name: _____

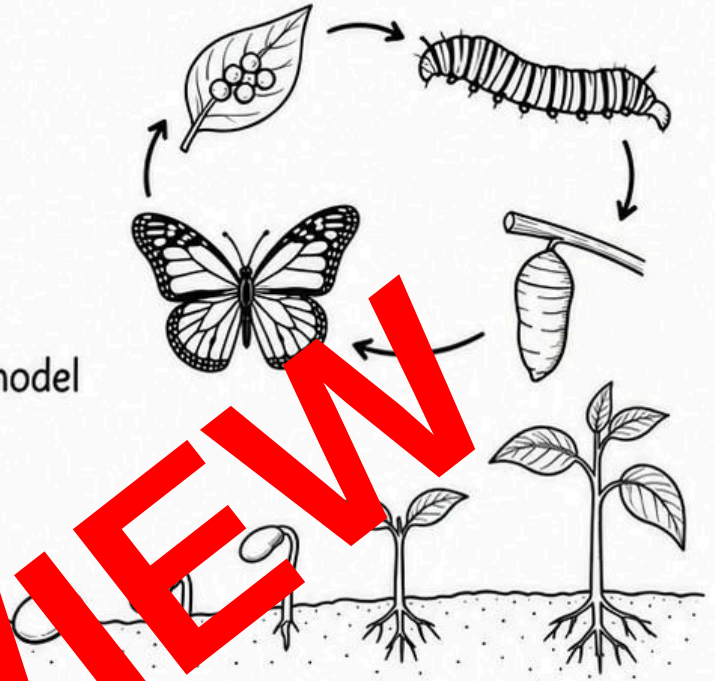
Date: _____

Life-cycle conference

Use your own work. Speak, point, draw, write, dictate or use a communication device.

① Prepare my evidence

- ☐ Classification with reasons
- ☐ Ordered bean cycle
- ☐ Ordered butterfly cycle
- ☐ Dated record or clearly identified model
- ☐ Safe and consistent method



② Explain

My claim and supporting evidence:

One similarity and one difference:

What my evidence cannot show:

③ Reflect

A question I could check next:



Name: _____

ANSWERS

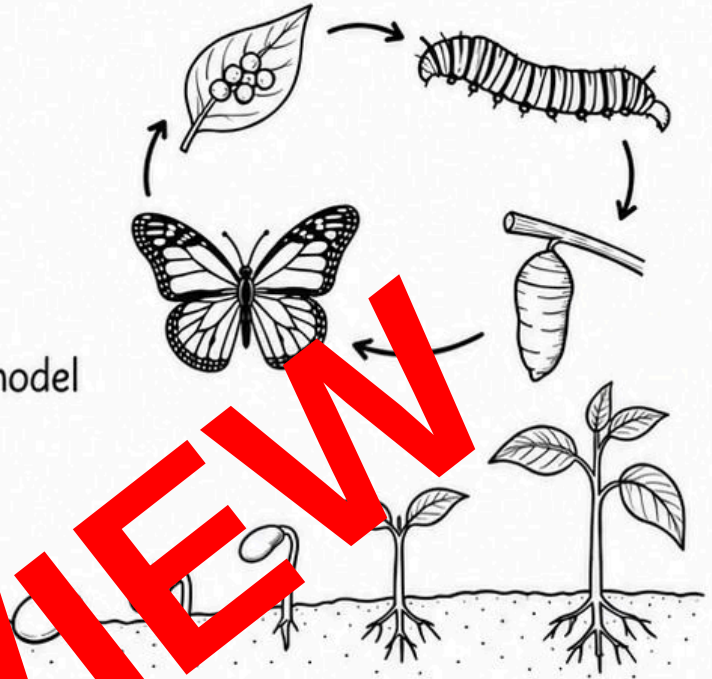
Date: _____

Life-cycle conference

Use your own work. Speak, point, draw, write, dictate or use a communication device.

① Prepare my evidence

- ☐ Classification with reasons
- ☐ Ordered bean cycle
- ☐ Ordered butterfly cycle
- ☐ Dated record or clearly identified model
- ☐ Safe and consistent method



② Explain

My claim and supporting evidence:

The cycles repeat through new seeds or eggs. C03 and C07 support this.

One similarity and one difference:

Both grow and reproduce. A bean has seed pods; a butterfly has a chrysalis.

What my evidence cannot show:

A stage model cannot prove exact timing.

③ Reflect

A question I could check next:

How will our bean plant change next week?



Name: _____

Date: _____

Care and communicate

Use what you have learned about life cycles to share a safe care message. Explain your idea clearly and use evidence.

1 Plan my message

My audience: _____

My safe care recommendation:



A newly watered bean plant in a tray.

2 Use evidence

My observation or named source:

How this supports my recommendation:

Use existing evidence.
Do not collect wildlife.
No guarantee that every seed grows.

3 Reflect

A useful limit:

My next question:

Name: **ANSWERS**

Date: _____

Care and communicate

Use what you have learned about life cycles to share a safe care message. Explain your idea clearly and use evidence.

1 Plan my message

My audience: **Classroom gardener**

My safe care recommendation:

Keep caring for our labelled plants using the agreed water and light routine.



A carefully watered bean plant in a tray.

2 Use evidence

My observation or named source:

Our own dated growth records.

Use existing evidence.
Do not collect wildlife.
No guarantee that every seed grows.

How this supports my recommendation:

Records let us notice change and check our ideas.

3 Reflect

A useful limit:

This evidence covers these plants and dates only.

My next question:

What changes will we observe next week?

Look for evidence!

Evidence Trail

Cooperative game - 2 to 4 players

Ask questions!
Build ideas together!

How to play

- 1 Choose a challenge card.
- 2 Point to the matching stop on the board.
- 3 Give an answer with evidence.
- 4 A partner asks one respectful question.
- 5 Check the teacher criteria, then keep or improve your explanation.
- 6 Pass the turn. Complete all six stops together.

Use a large counter or point. No time limit.
Speak, draw, point or use your communication device.

Worked turn

Card 2: Does every animal have a pupa?

Evidence: C01 shows a butterfly pupa. C08 shows a chicken cycle without one.

Response: Animal life cycles differ.

Teacher criteria are in the lesson guide.

Use evidence.
Be curious.
Work together!
Science helps us understand life.

Small questions. Big discoveries!

Evidence Trail Board

Life Cycle Detectives – Year 3

Look closely
Ask questions
Find evidence
Discover life cycles!

START

1 Notice

What can you observe?



2 Ask

What question can you check?



3 Compare

What is shared or different?



4 Explain

Which evidence supports you?



5 Apply

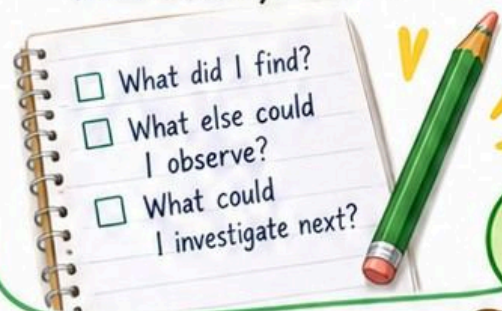
What safe action helps?



Be kind
Be safe
Help living
things thrive!

6 Reflect

What would you check next?



FINISH
TOGETHER

Follow the rules page.
All six stops matter.



Evidence Trail Challenge Cards



Look closely • Think deeply • Use evidence • Be a life cycle detective!

1 NOTICE:

Use C02.
What shows growth?



2 EXPLAIN:

Does every animal have a pupa?
Use C06 and C08.



3 COMPARE:

Use C03 and C07.
How do new generations begin?



4 ASK:

Ask a new question about bean growth.
Say what evidence you need.



5 EXPLAIN:

Use C04-C07.
Order the butterfly stages.



6 APPLY:

Suggest a safe way to study an animal cycle without collecting wildlife.



7 REFLECT:

A stage picture has no dates. What can it tell us, and what can it not tell us?



8 COMPARE:

What changes and what stays alike in our bean sowing-date comparison?



Use the teacher criteria in the lesson guide.

Facts: Australian Museum; Botanic Gardens of Sydney. Original illustrations.



Name: _____

Date: _____

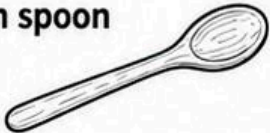
Assessment: Life Cycle Detectives

Part 1 - Evidence organiser

Use your own evidence. Explain your ideas with words, pictures or a supported response.

1 Classify and give a reason

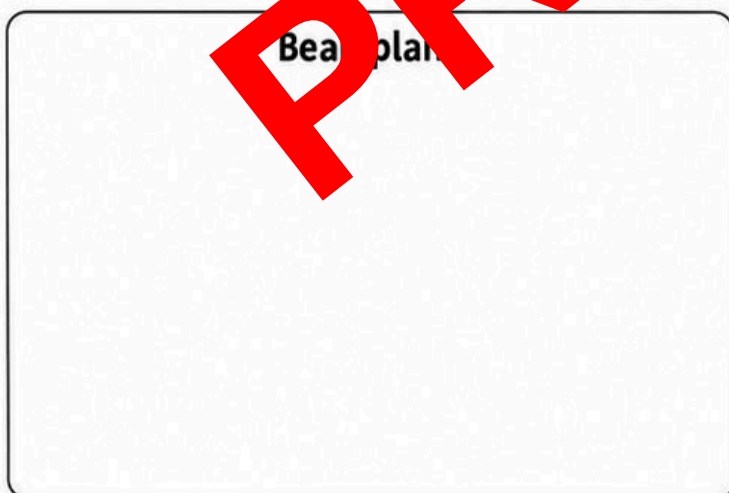
Look at each item. Decide if it is a living thing or a non-living thing. Write a reason for your choice.

Item	Category	Reason
Bean plant 		
Butterfly 		
Wooden spoon 		
Toy car 		

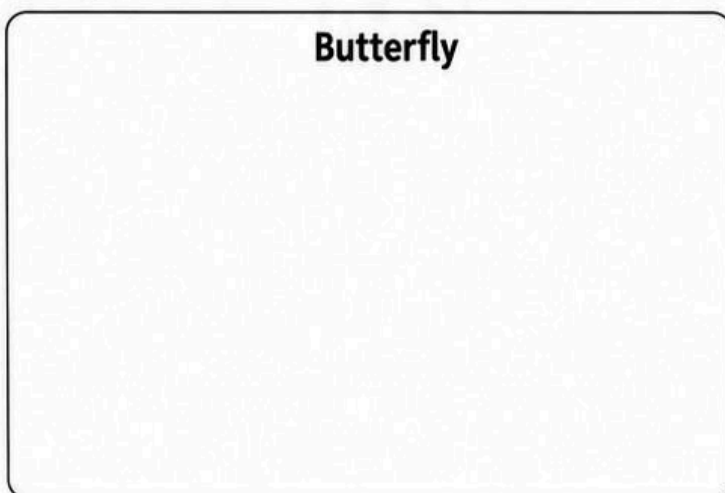
2 Show two complete cycles

Show ordered stages and when a new generation begins. You can draw and label, or use words.

Bean plant



Butterfly



3 Choose a dated observation or identify a supplied model.

What does it show?

Name: _____

Date: _____



Assessment: Life Cycle Detectives

Part 2 - Explanation and transfer



1. Explain a similarity and a difference between your two cycles.

2. Describe your question, prediction and a safe method.

3. Explain a dated measurement or labelled record. Include the unit when measuring.

4. Explain what your evidence cannot show and how you could check further.

5. **Transfer:** A kitten is already living. How could it grow into an adult and begin a new generation? Does it have a butterfly pupa? Explain.

6. Recommend one responsible care action for a chosen audience, supported by evidence.

Response: ☐ spoken ☐ drawn ☐ written ☐ dictated ☐ communication device ☐ demonstrated

Teacher evidence note:

Name: _____

Date: _____

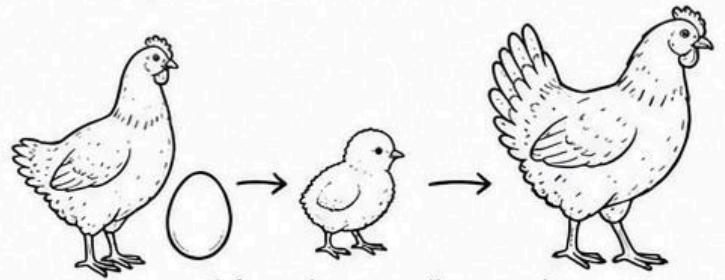
Rubric: Life Cycle Detectives

Year 3 Science



Observe. Compare. Explain. Make a difference.

From egg to new generations ...



... life cycles are all around us.

Criterion	Supported / incomplete	Independent / sound	Justified / transfer
Understanding	A category or cycle has an important gap.	Justifies categories and order of both cycles, including new generations.	Uses a chicken or mammal example to challenge a universal stage claim.
Evidence and method	Records or sources are unclear, method needs teaching.	Use dated observations or identifies a model, units and a safe consistent method.	Explains a method or source limit and a useful further check.
Explanation and use	Comparison or are clear lacks supporting evidence.	Explains shared/different features and a safe care action with evidence.	Adapts the recommendation to an audience and states a useful limit.
Reflection	Needs help to connect a question to evidence.	Asks a next question and explains a revision from evidence.	Justifies which new evidence would improve the explanation.

Judge the learning demonstrated. Access support or a communication mode does not lower achievement.

☐ ☐ ☐ ☐

Teacher name: _____ Date: _____

Butterfly example based on: Australian Museum, *Metamorphosis: a remarkable change*.

Life Cycle Detectives - Year 3
Lesson 01
What counts as living



Our learning

We can use evidence to classify living, once-living and never-living things.

Success: give a category and explain the clues.

PREVIEW

First ideas

Look at a bean plant, butterfly, toy car and wooden spoon.
Which are living? Explain your first ideas.
What would you need to observe?

PREVIEW

Several clues

Living things grow and use resources such as water or food.
Life cycles include reproduction across generations.
A single clue can mislead us.

PREVIEW

The plant and the toy

A bean plant can grow while staying in one place.

A toy can move when a person pushes it or a battery powers it.

Movement alone does not show that something is living.

PREVIEW

A careful classification

The butterfly is living. Its life cycle includes growth and reproduction.

The wooden spoon is once living. Its wood came from a tree.

The toy car is never living.

PREVIEW

Our evidence sort

Use W01 or the four picture examples.
Choose a category for each example.
Record clues, then compare reasons with a partner.
Use pictures, speech, drawing or writing.

PREVIEW

Reasons we can check

Which observation supports your category?

Could a moving object still be never twinning?

Listen to another explanation and revise yours if the evidence changes.

PREVIEW

Our exit explanation

Explain why the bean plant is living.

Explain why the wooden spoon belongs in a different group.

What could we observe tomorrow to learn more?

PREVIEW

Well Done!



Life Cycle Detective - Year 3
Lesson 02
Once living



Our learning

We can tell once-living and never-living things apart.
Success: explain what an example comes from.

PREVIEW

A leaf, a dead leaf and a rock

A leaf attached to a growing bean plant is part of a living plant.

A dead dry leaf is once living.

A rock was never a living organism.

PREVIEW

Origin gives us evidence

Wood came from a tree.

A wooden spoon is once living.

A toy made from metal and plastic was never an organism.

PREVIEW

A tricky claim

"The dry leaf does not grow, so it was never living."

What did the leaf come from?

How does that evidence change the claim?

PREVIEW

A revised explanation

The dry leaf came from a living plant.
It is now dead, so we classify it as once living.
We changed our explanation because we considered new evidence.

PREVIEW

Our careful record

Complete W02 or sort the pictures.

For each example, choose a category and add a reason.

Discuss a case where you changed your mind.

PREVIEW

Evidence discussion

How are the dead leaf and rock different?

Which reason is stronger: "it looks brown" or "it came from a plant"?

Explain your choice.

PREVIEW

Our exit explanation

Name one once-living example.

State its living origin.

Describe one thing you would check if you were unsure.

PREVIEW

Well Done!



Life Cycle Detective - Year 3
Lesson 03
Life-cycle questions



Our learning

We can explain how a life cycle continues across generations.
We can ask a question and predict from a class

PREVIEW

Growth and reproduction

A seedling grows into a larger plant.

A mature bean plant can produce new seeds.

Reproduction makes a new generation possible.

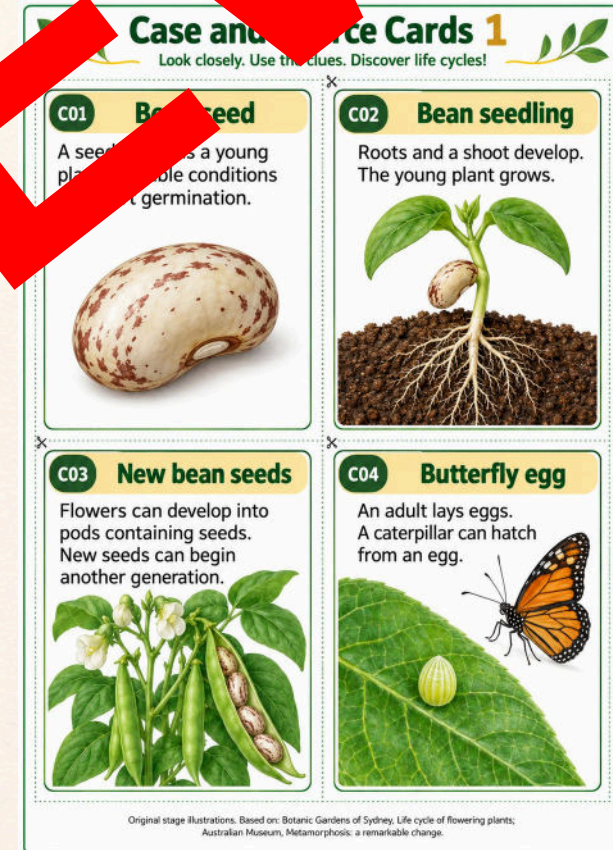
PREVIEW

A bean generation

Seed, seedling, growing plant, flowering plant, pods with seeds.

New seeds can start the next generation when conditions are suitable.

These are selected stages not equal lengths of time.



Based on: Botanic Gardens of Sydney, Life cycle of flowering plants.

Australian Museum, Metamorphosis: a remarkable change.

A butterfly generation

Egg, caterpillar, chrysalis, adult butterfly.
The adult can lay eggs that begin a new generation.

A chrysalis is the butterfly's pupa stage.



Based on: Australian Museum, Metamorphosis: a remarkable change (australian.museum)

A question we can observe

Question: What appears first when our bean seeds germinate?

Prediction: A root may appear before the shoot.

Evidence: dated observations of the same seed.

PREVIEW

Our questions

Use W03 and the stage cards.

Order the bean stages.

Ask one question, make a prediction and say how you could check it safely.

PREVIEW

Questions and evidence

Could a single picture tell us how many days a change took?

What extra evidence would we need?

A prediction is an idea to check, not a measured result.

PREVIEW

Our exit explanation

What is the difference between growth and reproduction?
Explain how new seeds or eggs keep the cycle going.

PREVIEW

Well Done!



Life Cycle Detective - Year 3
Lesson 04
Plant cycle



Our learning

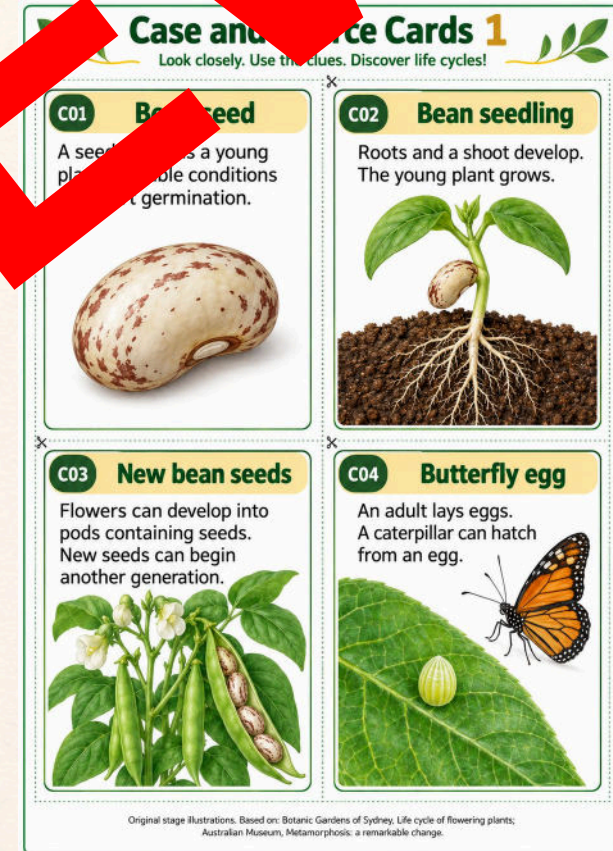
We can explain the bean plant cycle.

We can plan a safe comparison with one deliberate change.

PREVIEW

The bean cycle

Seed, seedling, growing plant, flowering
mature plant, pods with seeds.
New seeds can begin another generation.
Flowering does not mean the plant
immediately dies.



Based on: Botanic Gardens of Sydney, Life cycle of flowering plants.
Australian Museum, Metamorphosis: a remarkable change.

Our comparison question

Will seedlings started three days apart be the same height on one observation date?

Predict and explain your clue.

We will compare living plants without depriving them of care.

PREVIEW

One change

Group A starts first. Group B starts three days later.
Keep the same bean variety, pot size, soil, light, and care method.
Use three seeds in each group.

PREVIEW

Our safe setup

Use labelled pots A1-A3 and B1-B3.

An adult prepares damp potting mix.

Keep seeds away from mouths.

Wash hands after handling pots.

PREVIEW

Our plan and record

Complete W04. Name the change and things kept alike.

Choose a common measurement date.

Use W06 for actual observations.

A seed that has not germinated is a void observation.

PREVIEW

A method check

What would happen if group B also used a different pot size?
Why do we need the same measuring method?
Say what this comparison can and cannot tell us.

PREVIEW

Our care routine

Check the plants between lessons.

Use the agreed care method and record the sowing dates.

A complete plant cycle may take longer than our unit.

PREVIEW

Well Done!



Life Cycle Detective - Year 3
Lesson 05
Animal cycle



Our learning

We can order and explain the butterfly stages.

We can choose a safe way to study animal changes.

PREVIEW

Butterfly stages

Egg, caterpillar, chrysalis, adult butterfly.
The caterpillar is the larva.
The chrysalis is the pupa.



Based on: Australian Museum, Metamorphosis: a remarkable change (australian.museum)

Changes at each stage

A caterpillar feeds and grows.

The butterfly changes inside its chrysalis.

The adult emerges and can later lay eggs.

Based on: Australian Museum, Metamorphosis: a remarkable change (australian.museum)

Still can be living

A chrysalis may look still.

The organism is changing inside.

Movement alone cannot tell us whether something is living.

PREVIEW

Based on: Australian Museum, Metamorphosis: a remarkable change (australian.museum)

A safe observation method

Use verified pictures of the same butterfly species.
Check the labels and record the source.
Use dates only when the source supplies them.
Protect animals by leaving eggs and nests undisturbed.

PREVIEW

Our stage record

Use C04–C07 and W05.

Order the stages and explain two changes.

Show how eggs connect to the next generation.

Discuss a safe way to obtain evidence.

PREVIEW

Evidence has limits

A stage illustration helps us understand our world.
It cannot prove the exact number of days our local butterflies took.
Which extra evidence would answer this timing question?

PREVIEW

Our exit explanation

Which stage comes between caterpillar and adult?
Why can we learn from pictures without reading animals?

PREVIEW

Well Done!



Life Cycle Detective - Year 3
Lesson 06
Observe over time



Our learning

We can record changes with dates, plant height and centimetres.
We can use a table or graph to explain evidence.

PREVIEW

A consistent measurement

Start at the soil surface.

Measure to the top of the shoot in centimetres.

Use the same method each time.

If there is no visible shoot, record 0 cm.

PREVIEW

Our observation record

Include date, plant ID, height in cm and a visible feature.
Draw the same plant on two dates if useful.
Record what you observe, even when there is little change.

PREVIEW

Illustrative practice data

Invented practice set, not class observation.

Day 7: 2 cm. Day 10: 4 cm. Day 13: 6 cm.

What change does this table show?

It does not predict every seedling's growth.

PREVIEW

A graph with meaning

For the illustrative set, label the horizontal axis Day.

Label the vertical axis Shoot height (cm).

Use an equal scale and columns at 7, 10 and 13.

Keep the label "Illustrative practice data".

PREVIEW

Our practical observations

Use W06 and the agreed method.

Measure the same plant IDs on the chosen date.

Compare today's record with an earlier record.

Leave unobserved results blank.

PREVIEW

Our evidence explanation

Which dates and measurements support your claim?

Was each plant measured from the same starting point?

What would another observation help us check?

PREVIEW

Our exit explanation

State one change supported by your records.

Name the measurement unit.

Explain one limit of the evidence.

PREVIEW

Well Done!



Life Cycle Detectives - Year 3
Lesson 07
Compare cycles



Our learning

We can compare two life cycles using the same criteria.
We can support a conclusion with stage evidence.

PREVIEW

Useful comparison criteria

Compare growth, stages and reproduction

Use each criterion for both organisms.

Colour alone does not explain a life cycle.

PREVIEW

What the cycles share

Bean plants and butterflies grow during their life cycles.
Adults can produce a new generation.
New seeds or eggs continue the cycle.

Sources: Botanic Gardens of Sydney, Life cycle of flowering plants; Australian Museum,
Metamorphosis: a remarkable change.

A clear difference

A bean plant produces seeds in pods.

A butterfly lays eggs and has a chrysalis stage.

These stages are different even though both cycles repeat.

Sources: Botanic Gardens of Sydney, Life cycle of flowering plants; Australian Museum, Metamorphosis: a remarkable change.

A stronger explanation

"Both organisms grow and reproduce, but their stages differ."

Support the claim with the bean seed/plant and butterfly egg/chrysalis examples.

Do not claim equal stage timing from a diagram.

Sources: Botanic Gardens of Sydney, Life cycle of flowering plants; Australian Museum, Metamorphosis: a remarkable change.

Our comparison chart

Use W07 with the two ordered card sequences.
Add a similarity and two differences.
Explain the evidence for your conclusion.
Identify an observation or stage model you used.

PREVIEW

Where evidence comes from

A dated bean record shows what our plan did.

A verified butterfly stage model shows a general sequence.

A made-up practice table helps us learn a method.

Keep these evidence types distinct.

PREVIEW

Our exit explanation

Explain one similarity and one difference.

Which evidence supports each?

What does the evidence leave unanswered?

PREVIEW

Well Done!



Life Cycle Detective - Year 3
Lesson 08
Explain exceptions



Our learning

We can check a claim about all animals using different examples.

We can explain a useful limit of a life-cycle model.

PREVIEW

The claim to test

"Every animal has a pupa stage."

What does the butterfly example show

Can one example prove the claim is true for every animal?

PREVIEW

A chicken counterexample

Chicken: egg, chick, juvenile, adult, new eggs.
There is no pupa stage in this simplified chicken cycle.

C08 gives a counterexample to the claim



Based on: Australian Museum, Metamorphosis: a remarkable change.

A mammal example

A kitten grows into an adult cat.

Adult cats can reproduce and have kittens.

Cats have no butterfly-like pupa stage.

Most mammals give birth to live young. Some mammals lay eggs.

Based on: Australian Museum, Mammals (australian.museum)

A careful conclusion

The butterfly has a pupa stage.

The chicken and cat examples do not.

Animal life cycles differ.

We check a new species rather than guessing its stages.

PREVIEW

Our correction

Use W08 and C08.

Replace the "every animal" claim with a supported explanation.

Name your counterexample

State one thing a simplified stage model does not tell us.

PREVIEW

A safe care choice

Someone wants to hatch unknown wild eggs to see a cycle.

Recommend verified pictures and leave wildlife undisturbed.

Explain how this protects animals.

Pictures still need clear species and stage labels.

PREVIEW

Our exit explanation

Does every animal have a pupa stage?

Give evidence from two examples.

What would you check for on an unfamiliar animal?

PREVIEW

Well Done!



Life Cycle Detective - Year 3
Lesson 09
Life-cycle conference



Our learning

We can explain our own classifications and compare two life cycles.
We can show evidence and explain.

PREVIEW

Our evidence folder

Choose a classification record and two cycles of representations.
Find a dated observation or identify a simplified model.
Have your method and question ready to explain.

PREVIEW

A short explanation

State your claim.

Point to the evidence that supports it.

Explain what the evidence shows.

Name one thing it does not show.

PREVIEW

Assessment part I

Use A1a.

Classify the four examples and explain reasons.

Represent the bean and butterfly cycles.

Connect new seeds and eggs to the next generation.

PREVIEW

Assessment part 2

Use A1b or an equivalent recorded response.
Compare the cycles using evidence.
Explain a measurement or safe observation method.
Apply your learning to the kitten example.

PREVIEW

Our conference choices

Speak, point to pictures, draw, write, dictate or use your communication device.

Show your own reasoning.

Use your portfolio to support the explanation.

W09 helps you check your evidence.

PREVIEW

A teacher checkpoint

What observation supports your claim?

How did you keep the method safe and consistent?

What difference matters in the new example?

What would you check next?

PREVIEW

Our reflection

Which claim can you now support?

What limitation did you explain?

Which question still needs more evidence?

PREVIEW

Well Done!



Life Cycle Detective - Year 3
Lesson 10
Can and communicate



Our learning

We can use evidence to recommend responsible care.
We can explain our ideas to a chosen audience.

PREVIEW

Evidence informs care

Our bean records help us notice changes.
Keep appropriate daily care and a consistent method.
Use observations to check an idea rather than promise a result.

PREVIEW

Science helps a woodland

Scientists at the Australian Botanic Garden collect and store seeds.

Seeds can help woodland plants regenerate.

Understanding plant cycle helps address a real conservation need.

Based on: Botanic Gardens of Sydney, Life cycle of flowering plants (botanicgardens.org.au)

A classroom recommendation

Recommendation: keep caring for our labeled bean plants.

Evidence: our dated records show their changes.

Limit: our observations cover only these plants and dates.

Next question: what changes will we see next week?

PREVIEW

A message for an audience

Choose a classroom gardener or younger class.

Explain a safe action, evidence and a link.

Use words, pictures or a practical demonstration.

Do not collect eggs or wildlife for the message.

PREVIEW

Our communication record

Use W10 and your existing portfolio.

Make a recommendation and explain why.

State what you observed or which source you used.

Add one question to investigate next.

PREVIEW

A respectful evidence question

Ask: Which evidence supports your recommendation?

Listen and clarify.

Revise a claim if the evidence changes.

A revision can improve a scientific explanation.

PREVIEW

Our final reflection

Explain one shared feature and one difference between cycles.

Name one responsible action.

Say what further evidence would help you learn more.

PREVIEW

Well Done!



Life Cycle Detectives - Year 3 Unit Quiz



Our quiz choices

Try each question before viewing its answer.
Explain or demonstrate your reasoning.
Speak, point, draw, write, dictate or use a communication device.

PREVIEW

Question 1

Does every animal have a pupa stage?

PREVIEW

Answer 1

No. The butterfly does, but the chicken and cat examples do not. Animal life cycles differ.

Sources: Australian Museum, Metamorphosis: a remarkable change; Mammals (australian.museum).

Question 2

What completes the bean plant's cycle?

PREVIEW

Answer 2

The mature flowering plant produces seeds in pods. Under suitable conditions, new seeds can start another generation.

Source: Botanic Gardens of Sydney, Life cycle of flowering plants (botanicgardens.org.au).

Question 3

A toy moves and a bean plant stays still. Which is living, and why?

PREVIEW

Answer 3

The bean plant is living. It grows and has a life cycle that includes reproduction. A toy moves through push or power. Movement alone is insufficient.

PREVIEW

Question 4

How do a dead dry leaf and a rock differ?

PREVIEW

Answer 4

The dead dry leaf is once living because it came from a living plant.
The rock was never a living organism.

PREVIEW

Question 5

Put these butterfly stages in order: adult, egg, chrysalis, caterpillar.

PREVIEW

Answer 5

Egg, caterpillar, chrysalis, adult butterfly. Adults can lay eggs for the next generation.

Source: Australian Museum, Metamorphosis: a remarkable change (australian.museum).

Question 6

Our sowing-date comparison also changes crop size. Is the method a fair comparison? Explain.

PREVIEW

Answer 6

It now has two deliberate changes. Use the same pot size, bean variety, light and care method so sowing date is the only deliberate change.

PREVIEW

Question 7

Illustrative practice data: day 7 = 2 cm, day 10 = 4 cm, day 13 = 6 cm. What changed, and what does this not prove?

PREVIEW

Answer 7

In this invented practice set, shoot height increased by 4 cm from day 7 to day 13. It does not prove that our real seedlings grew this way or that every bean has the same pattern.

PREVIEW

Question 8

Why use verified stage pictures instead of collecting wild eggs?

PREVIEW

Answer 8

Pictures can show stages while leaving wildlife undisturbed. Check species and stage labels. A general illustration does not supply actual timing unless dates are known.

PREVIEW

Question 9

A chicken cycle shows egg, chick, juvenile and adult. Someone adds a chrysalis. How would you correct the model?

PREVIEW

Answer 9

Remove the chrysalis. A chicken has no pupal stage. Explain that the butterfly stage labels cannot be applied to every animal.

Butterfly comparison source: Australian Museum, Metamorphosis: a remarkable change.

Question 10

A class measured only one seedling once. Can we claim that all beans grow at the same rate? What would help?

PREVIEW

Answer 10

No. One measurement cannot show change over time or all beans. Record the same plants on several dates using consistent method and compare several seedlings. Care for every plant appropriately.

PREVIEW

Our reflection

Which answer did you support with evidence?

Which idea changed?

Which question still needs observations?

PREVIEW

Well Done!

