

Spiders – build a spider and its house

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A Trapdoor spider burrow ©Sabrina Trocini

Number of lessons: 4

Year Level(s): 1 (can be adapted for F-2)

Australian Curriculum content descriptions:

Science.

Biological Sciences- Living things have a variety of external features ([ACSSU017](#))

Science.

Biological Sciences- Living things live in different places where their needs are met ([ACSSU211](#))

Design Technologies- Processes and Production Skills.

Generate, develop and record design ideas through describing, drawing and modelling ([ACTDEP006](#))

Use materials, components, tools, equipment and techniques to safely make designed solutions ([ACTDEP007](#))

Achievement standard:

Science

By the end of Year 1, students describe objects and events that they encounter in their everyday lives, and the effects of interacting with materials and objects. They describe changes in their local environment and how different places meet the needs of living things.

Students respond to questions, make predictions, and participate in guided investigations of everyday phenomena. They follow instructions to record and sort their observations and share them with others.

Design Technologies - Processes, and Production Skills

With guidance, students create designed solutions for each of the prescribed technologies contexts. They

describe given needs or opportunities. Students create and evaluate their ideas and designed solutions based on personal preferences. They communicate design ideas for their designed products, services and environments using modelling and simple drawings. Following sequenced steps, students demonstrate safe use of tools and equipment when producing designed solutions.

Lesson 1

Context

This is the first lesson in a series of four. Over the teaching sequence, students will learn the features of an Arachnid and their habitats as per the Science Curriculum. They will design a spider and its habitat and construct it using craft and recyclable materials as per the Design Technologies Curriculum and STEM teaching and learning ideals. This lesson sequence includes Cooperative Learning strategies and Inquiry-Based teaching approaches, alongside learning experiences teachers were taught on a BushBlitz TeachLive expedition.

Materials and equipment

Blank paper for drawing spiders. Students own pencils. Large paper for teacher's class notes/smart board.

Safety Advice

Nil

Objectives

Using students prior knowledge as a starting point, they will learn the features of a spider and what makes it part of the Arachnid family in an interactive manner.

Introduction

- Assemble students seated on the mat.
- Using Co-operative learning strategy, 'Hand up, stand up, pair up,' ask students to pair up.
- Explain that the focus of the lesson is about working out how we can tell that an animal is what it is by how it looks and today we are focusing on spiders.
- Focus question in pairs- "what do you know about spiders?"
- Time students for 3-4 minutes discussing in pairs.

When finished have students share while you scribe relevant information given into a KWL chart on the front board, -K-what we already know about spiders, W-what we want to know/not sure about. Leave L blank to write in what we have learnt at the end of this lesson/series of lessons.

- Have students go and draw a spider at their own desks with lead pencil and paper.
- Direct students to go on a Gallery Walk of the classroom looking at the pictures they have each drawn.
- Discuss the similarities that they mostly all have and agree that a spider has. (Scientific research and back-up to follow.)

Core

Let's find out what the scientific research says."

Watch- <https://www.youtube.com/watch?v=6k-0yaLrJl> -Arachnids. (What a spider looks like.)

From students' prior knowledge, and their viewing of the clip, come up with a criteria to identify a spider. (These facts are- two body parts, eight legs, Chelicerae or fangs, no wings, no antennae.

Direct students to change their first diagram as necessary.

Conclusion

- Assemble students on the mat for final mat session.
- Draw a spider outline and have students tell you which part is which.
- Write a list of the vocabulary that was introduced this lesson ready to refer to in the next lesson- arachnid, chelicerae.

Resources

Useful links:

Arachnids. (What a spider looks like.) <https://www.youtube.com/watch?v=6k-0yaLrJl>

<https://www.earthwatch.org.au/teacher-resources>

Lesson 2

Context

This is the second lesson in a series of four. Over the teaching sequence, students will learn the features of an Arachnid and their habitats as per the Science Curriculum. They will design a spider and its habitat and construct it using craft and recyclable materials as per the Design Technologies Curriculum and STEM teaching and learning ideals. This lesson sequence includes Cooperative Learning strategies and Inquiry-Based teaching approaches, alongside experiences teachers were taught on a BushBlitz TeachLive expedition.

Materials and equipment

Notes from previous lesson to show students- spider diagram, vocabulary words from last week.

Safety Advice

Safety discussions with students before they go looking for spiders, not to touch spiders, they are only to look with their eyes for them. Include in discussion students not to destroy the habitat of the spider.

Objectives

1. Students build on their understanding of what a spider looks like as opposed to an insect and explore their school environment for real-life examples.
2. For students to develop an understanding that spiders live in different habitats- webs, cobwebs and burrows.

Introduction

- With students seated on the mat as a class, review lesson one- what do spiders look like?
- Have simple spider picture on smart board.
- Using Co-operative learning strategy, 'Hand up, stand up, pair up,' ask students to pair up. Focus question for their paired discussion is- 'what can you remember about the features of spiders?'
- Have students discuss then share as a class while you annotate the class spider picture.
- Review the vocabulary learnt from the previous lesson- arachnid, chelicerae.
- Explain that the focus of the lesson is where spiders live. New focus vocabulary word- habitat. (Add this to your vocab board.)

Core

Discuss places where spiders live-where students have seen them.

Spider walk- safety discussions re students not touching spiders, they are only to look with their eyes for them. Include in discussion students not to destroy the habitat. For the purpose of this part of the lesson, students are looking primarily at spiders in webs and cobwebs and maybe in plants around their school.

Students explore and look for evidence of spiders living in the school environment with discussions as you explore as a class group.

Return to room.

Introduce burrowing spiders including Tarantulas and Trap-door spiders.

Students watch spider lesson from Bush Blitz TeachLive East Kimberley 2022. Professor Mark from WA Museum being interviewed by teacher re spiders and spider habitats with real live Tarantula.

Conclusion

Go over KWL chat and write in the L part what we have learnt in the last two lessons.

Resources

Digital: Bush Blitz TeachLive East Kimberley 2022 with Dr Mark.- reference Sabrina Troccini.

Useful links:

<https://www.earthwatch.org.au/teacher-resources>

Lesson 3

Context

This is the third lesson in a series of four. Over the teaching sequence, students will learn the features of an Arachnid and their habitats as per the Science Curriculum. They will design a spider and its habitat and construct it using craft and recyclable materials as per the Design Technologies Curriculum and STEM teaching and learning ideals. This lesson sequence includes Cooperative Learning strategies and Inquiry-Based teaching approaches, alongside experiences teachers were taught on a BushBlitz TeachLive expedition.

Materials and equipment

Planning sheet to A3 size for junior primary students- 1 per student, drawing supplies.

Objectives

Students demonstrate what they have learnt about the features of Arachnids by designing and making a plasticine spider with the correct structures.

Students demonstrate their understanding of different spider habitats by choosing to construct one for their spider to live in.

Introduction

Assemble students on the mat for mat session. Revise vocabulary lists from previous lessons. Refer students to the KWL chart from previous lessons.

Core

Introduce to students the purpose of the lesson-WALT- (What We Are Learning Today-) "you are going to design a spider and it's home, using the factual information that you have learnt in the last two lessons about what spiders look like and where they live."

- Show planning sheet to students.
- Students draw in pencil their spider design and its habitat- encourage students to include the vocabulary learnt over the previous lessons.
- Students annotate and label their designs.
- Students list the materials they will need to make their designs in reality.

Conclusion

Students show and explain their designs.

Teacher to collect planning sheets and collate the materials requested by each student in preparation for next lesson.

Resources

Worksheet:

design template. See attached.

Design Plan	Name
<p>My Spider-</p>	<p>List of materials needed to make my spider.</p> <ul style="list-style-type: none"> • e.g. Plasticine for the main body and arachnid features. • . • . • . • .
<p>My spider's habitat is _____</p>	<p>List of materials needed to make my spider's habitat.</p> <ul style="list-style-type: none"> • . • . • . • .

Lesson 4

Context

This is the final lesson in a series of four. Over the teaching sequence, students will learn the features of an Arachnid and their habitats as per the Science Curriculum. They will design a spider and its habitat and construct it using craft and recyclable materials as per the Design Technologies Curriculum and STEM teaching and learning ideals. This lesson sequence includes Cooperative Learning strategies and Inquiry-Based teaching approaches, alongside experiences teachers were taught on a BushBlitz TeachLive expedition.

Materials and equipment

Before the lesson go through the design and planning sheets that were completed by the students in the previous lesson as outlined in lesson plan 3. Collate and compile the construction equipment that the students have requested in their design documents.

Assemble craft and construction equipment for the building lesson including glue, sticky tape, scissors, hot glue guns etc.

Ensure a variety of crafting materials have been supplied, including materials that students haven't listed on their design plans to promote flexibility in their thinking and allow for malfunctions in the planned design construction.

Promote and encourage the use of recyclable and re-useable materials and the collection of such from home.

Plasticine for the creation of the spider if chosen by the students.

The pre-organisation of parent helpers or other adult help for this lesson would be beneficial, especially in the younger years to assist with construction and assembly of student designs and enhance ease of safety with equipment.

Graphic organiser Plus/Minus/Interesting, (PMI) self-evaluation sheet copied for each student.

Safety Advice

Give students in a whole-class mat session a briefing of the safety of using and moving with scissors. If a hot glue gun is being used, ensure there is adult supervision at a set area in the classroom and explain these rules and expectations.

Objectives

Students demonstrate what they have learnt about the features of Arachnids and their understanding of different spider habitats by constructing a spider and its habitat from craft and recyclable materials. Students evaluate and critique their design after construction is complete.

Introduction

Have room all set up for construction of spiders and their habitats with enough space for students and all equipment necessary. Allow enough time for construction and clean up to ensure students and staff are not rushed and the creative process can flow and evolve at a natural pace.

- Assemble students on the mat for mat session. Revise vocabulary lists from previous lessons. Refer students to the KWL chart from previous lessons.
- Handout students' completed design sheets from the previous lesson and allow them time to read over plans and question and comment.
- Allow students a movement break for them to find their own workspace for their construction by placing their design sheet on their chosen space.
- Whole class debriefing on the mat covering the topics of safety, use of equipment and general expectations of the planned construction time.

Core

Students build their spiders and spider habitat with collected materials.

Teacher and adult helpers to assist students with their construction and supervise hot glue guns and cutting of materials.

Conclusion

As students finish, have a cleared space for them to place and display their creation along with their design sheet.

As a whole class direct and assist with a whole class clean up, recycling and reusing left-over construction materials where possible.

Teacher or adult helper to Photograph each student holding their construction.

Allow time where possible, (perhaps in another session,) for students to reflect on their finished product and to complete their written response and self-evaluation of their design and making process.

See attached self- evaluation PMI graphic organiser sheet.

Allow students to share their products and reflections through in-class sharing or display of finished creations, plans and photos.

Resources

Worksheet:

Graphic organiser- Plus/Minus/Interesting- self-evaluation sheet (next page).

My Spider construction. NAME _____

INSERT PHOTO OF STUDENT AND THEIR CONSTRUCTION

Plus + These are the things that worked well in my design that I liked...

Minus - Some things I would change about my design and construction...

Interesting ?? Some observations about my design and construction..