

The Mary Brooksbank and George Bass Science Framework

*Planning, programming and assessing Science for students
with disability*



Working Scientifically

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Syllabus Outcome

Explores their immediate surroundings by questioning, observing, using their senses and communicating to share their observations and ideas. STe- 4WS

Students question and predict by:

Syllabus Indicator 1: Responding to questions about familiar objects and events they are curious about in the natural and made environments. (AC SIS014)

Framework Indicators

4WS1A: Using their senses to explore familiar objects and events in natural and made environments

Teacher Language

Give an instruction

SN, smell the (item).

SN, does that taste good?

SN, can you smell the (item)?

SN, it is (texture).

SN, this feels (texture).

SN, how does this feel?

SN, feel the (item).

SN, look at the (item).

SN, can you see the (item)?

SN, it is noisy.

SN, listen to the (item).

SN, can you hear the (item)?

Students will be able to achieve this indicator with varying levels of support. Fade this support as the student works toward developing independence.

Teaching Activities

4WS1A: Using their senses to explore familiar objects and events in natural and made environments

Students will be able to meet this indicator through incidental experiences and across environments throughout the school day. Teachers can support student exploration through making observational statements about their surroundings and what they are experiencing. Some examples could include:

Cooking:

‘SN, smell the toast’

‘SN, does that taste good?’

‘SN, can you smell the toast?’

‘SN, it is crunchy.’

Exploring sensory items:

'SN, this feels soft.'

'SN, how does this feel?'

'SN, feel the blanket.'

Being in the playground or being outside:

'SN, look at the bird.'

'SN, can you see the bird?'

Being in a shopping centre:

'SN, it is noisy.'

'SN, can you hear the people?'

Experiencing a thunderstorm:

'SN, listen to the thunder.'

'SN, can you hear the thunder?'

Websites that contain resources, games or activities that could be used to support this goal include:

- The Five Senses | The Dr. Binocs Show | Learn Series For Kids:
<https://www.youtube.com/watch?v=q1xNuU7gaAQ>
- SIDs the Science Kids: <http://pbskids.org/sid/isense.html>

Working Scientifically**Syllabus Outcome**

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Students question and predict by:

Syllabus Indicator 2: Making predictions resulting from their questions.

Framework Indicators**Teacher Language**

4WS2A: Making predictions using prior knowledge

Give an instruction

No specific teacher language

Students will be able to achieve this indicator with varying levels of support. Fade this support as the student works toward developing independence.

Teaching Activities**4WS2A: Making predictions using prior knowledge**

Students accessing this framework can achieve this indicator as it is written by using prior knowledge of their immediate surroundings. Observations of a student are necessary to determine when and under what circumstances they are demonstrating making these predictions. Teachers need to use their indepth knowledge of students' behaviours as a student accessing this framework may not be able to verbalise a prediction. However, by observing body language and facial expressions teachers may be able to determine when students are making a prediction.

Examples of this are as follows:

- A student in a wheelchair enjoys watching and interacting with other children in the playground. When a staff member begins to move the wheelchair the student begins to smile and laugh predicting that they are about to be moved towards the playground where they can easily observe the other students.
- A student will choose to kick a ball up a hill rather than along the ground as they know the ball will run back down the hill to them. They are predicting that it will return to them.
- A student hears a rumble of thunder or looks up into the sky and sees clouds. The student may verbalise 'storm', make a gesture towards the sky or display anxiety if upset by storms. They are making predictions about what may happen using prior knowledge based on observations of their environment.
- A staff member works one on one with a student. The student enjoys this one on one interaction to the point where when the student hears the staff member's voice

or sees them in the classroom, the student begins to laugh and smile. The student is making a prediction that the one on one interaction is about to take place.

- A student flinches or puts their hands to their ears when a balloon is blown up. They are predicting that the balloon may burst.
- A student covers their face or responds with excitement when a spray bottle containing water is held in front of their face. They are predicting they will get wet.

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Students plan and conduct investigations by:

Syllabus Indicator 3: Share in what they already know and how they could find out more about their questions relating to the natural and made environments.

Framework Indicators

4WS3A: Participates in lessons relating to the natural and made environments and are provided with opportunities to demonstrate what they know

Teacher Language

Give an instruction

SN, this is (environment). It is a made environment.

SN, this is a (environment). It is a natural environment.

SN, where is the made/natural environment?

Correction/prompt

This is the made/natural environment.

Try again.

Students will be able to achieve this indicator with varying levels of support. Fade this support as the student works toward developing independence.

There are a variety of acceptable ways a student can indicate a choice or make a response. These include; head/physical movements (e.g. nodding, pointing and reaching), facial expression, eye gaze, vocalisations and/or verbal responses.

Teaching Activities

4WS3A: Participates in lessons relating to the natural and made environments and are provided with opportunities to demonstrate what they know

Teachers can provide students with opportunities to achieve this indicator in a variety of ways around a range of topics relating to natural and manmade environments. Activities could include:

- Observing YouTube clips of a variety of made and natural environments such as a shopping centre, the beach, a construction site, a forest.
- Pictures of made and natural environments cut into jigsaw pieces and reconstructed by students with varying levels of support.

- Choosing between made and natural environments using visual representations of environments.

Teacher language to support these activities would include:

‘SN, this is a shopping centre. It is a made environment.’

‘SN, this is a beach. It is a natural environment.’

‘SN, where is the made/natural environment?’

Websites that contain resources, games or activities that could be used to support this goal include:

- Natural and Built Environments: <https://www.youtube.com/watch?v=mXh8e2m6qSM>
- PBS Kids – Natural Environment: <http://pbskids.org/seekworld/index.html?load=environment>
- Turtle Diary – Seed Germination: <http://www.turtlediary.com/kids-science-experiments/plant-growth-experiment.html>

Africa animal adventures for children



Animal zoo



Lifecycles



PreschoolMM



Category carousel



Franklin Frog



Parker Penguin



Working Scientifically**Syllabus Outcome**

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Students plan and conduct investigations by:

Syllabus Indicator 4: Exploring and making observations by using their senses to gather information about objects and events in their immediate surroundings. (AC SIS011, ACSHE013)

Framework Indicators

4WS4A: Exploring by using their senses, objects and events in their immediate surroundings

Teacher Language**Give an instruction**

SN, look at the (item).

SN, smell the (item).

SN, the (item) feels (temperature).

SN, the (item) is (weight).

SN, listen to the (item).

Students will be able to achieve this indicator with varying levels of support. Fade this support as the student works toward developing independence.

Teaching Activities**4WS4A: Exploring by using their senses, objects and events in their immediate surroundings**

Students are continually and involuntarily using their senses across all environments.

Teachers need to draw attention to what a student may be exploring with their senses and what that means for the student. Some examples are as follows:

- When gardening students could be smelling, feeling, observing plants, soil or gardening equipment. Teachers could make observational statements to accompany this:
'SN, look at the rose.'
'SN, smell the flower.'
'SN, the soil feels warm.'
'SN, the spade is heavy.'
- When sitting in the sun observational statements may include:
'SN, the sun feels warm.'
'SN, the sun is bright.'
- When in the playground observational statements could include:

'SN, listen to the lawn mower.'

'SN, look at the birds.'

Websites that contain resources, games or activities that could be used to support this goal include:

Story Creator



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Students plan and conduct investigations by:

Syllabus Indicator 5: Manipulating objects and materials through purposeful play.

Framework Indicators

4WS5A: Manipulating objects and materials through purposeful play

Teacher Language

Give an instruction

No specific teacher language

Students will be able to achieve this indicator with varying levels of support. Fade this support as the student works toward developing independence.

Teaching Activities**4WS5A: Manipulating objects and materials through purposeful play**

Most students will be able to achieve this indicator independently. Purposeful play for students without a disability is using objects and materials the way they are intended and with their intended purpose.

For students with a disability play can look very different and may not follow traditional definitions of what is the purpose of the object or material. However, it should be noted that while students with disabilities may not be engaging in conventional purposeful play their actions with objects and materials are serving a purpose to them.

For students with high support needs or physical disabilities varying levels of support will be needed to assist them to engage with objects and materials through play. It should be noted for this indicator that when a teacher provides physical support to assist students the aim is not to teach the student to play with an item in a purposeful way. The aim of the teacher's support is to encourage students to engage with the object or material as independently as possible in a way that is meaningful to them.

Working Scientifically**Syllabus Outcome**

Explores their immediate surroundings by questioning, observing, using their senses and communicating to share their observations and ideas. STe- 4WS

Students process and analyse data and information by:

Syllabus Indicator 6: Organising objects or images of objects to display data and/or information.

Framework Indicators

4WS6A: Organising objects or images of objects to display data and/or information

Teacher Language**Give an instruction**

SN, put the (animal) in its home.

SN, where does the (animal) live?

SN, how many people have (feature)?

Correction/prompt

This is where the (animal) lives.

Try again.

Students will be able to achieve this indicator with varying levels of support. Fade this support as the student works toward developing independence.

There are a variety of acceptable ways a student can indicate a choice or make a response. These include; head/physical movements (e.g. nodding, pointing and reaching), facial expression, eye gaze, vocalisations and/or verbal responses.

Teaching Activities**4WS6A Organising objects or images of objects to display data and/or information**

Teachers can provide students with opportunities to achieve this indicator in a variety of ways around a range of topics. Activities could include:

- Matching animals to their habitats or homes. This could involve watching a modelled lesson where animals are matched to their habitats or homes followed by an activity where students do the matching with varying levels of support. Some examples of teacher language to support this activity could:
'SN, put the dog in its home.'
'SN, where does the horse live?'
- Constructing a picture graph of personal details (eye, hair colour, boys, girls). This could involve watching a modelled lesson around constructing a graph about

personal details followed by students constructing the graph with varying levels of support. Some examples of teacher language to support this activity could:

‘SN, which column do the blue eyes go in?’

‘SN, find all the boys.’

Websites that contain resources, games or activities that could be used to support this goal include:

- Sheppards Software – Colour Sorting:
<http://www.sheppardsoftware.com/preschool/colors/colorgame.htm>

Sid’s Science Fair



Pepi Tree



Category carousel



Working Scientifically**Syllabus Outcome**

Explores their immediate surroundings by questioning, observing, using their senses and communicating to share their observations and ideas. STe- 4WS

Students process and analyse data and information by:

Syllabus Indicator 7: Engaging in discussions about observations and using drawings to represent ideas. (AC SIS233)

Framework Indicators**Teacher Language**

4WS7A: Recreating observations to represent ideas

Give an instruction

No specific teacher language

Students will be able to achieve this indicator with varying levels of support. Fade this support as the student works toward developing independence.

Teaching Activities**4WS7A: Recreating observations to represent ideas**

The following activities are designed to provide students with opportunities to represent their ideas about observations. These activities are not limited to paper but could also be done using technology such as notebook files on an interactive whiteboard.

- Recreating a picture. This activity could be done using a variety of pictures covering range of science based themes including made and natural environments, the human body, the seasons, products, places and spaces. Provide students with a picture. Also provide them with a picture cut into pieces. The students would match the pieces to the correct part of the whole picture.
- Recreating a sequence. This activity could be done using a variety of sequencing activities covering a range of science based themes including life cycles, the seasons and cooking. Provide students with a model of the correct way the sequence occurs. Also provide students with the pieces of the sequence that need to be ordered correctly.
- Tracing/drawing a picture. This activity could be done using a variety of drawing templates covering a range of science based themes including robots, transport and living things. The drawing templates for these activities would change dependent on student ability. It may mean that students are involved in simply making marks on a page to represent their ideas, tracing over whole outlines (a robot) and completing outlines with parts missing (a robot with 1 arm missing).

Websites that contain resources, games or activities that could be used to support this goal include:

- Sheppards Software – Jigsaw Puzzles:
<http://www.sheppardsoftware.com/content/animals/kidscorner/puzzles/puzzlepage.htm>
- Sheppards Software – Paint & Make an environment:
<http://www.sheppardsoftware.com/content/animals/kidscorner/paintandmake/indexpaintandmake.htm>

Little guy photo booth - creative playtime editor for kids and boys



GazziliScience



Axel Scheffler's Flip Flap Farm



Art marker playschool



This is my body- Anatomy for kids



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Students communicate by:

Syllabus Indicator 8: Using a range of methods to share observations and ideas such as drawing, informal and guided discussion, role play, contributing to joint construction of short texts and/or using digital technologies.

Framework Indicators

4WS8A: Using a range of methods to share observations and ideas such as eye gaze, vocalisations, gesture, body language and communication systems

Teacher Language

Give an instruction

No specific teacher language

Students will be able to meet this outcome with varying levels of support. Fade this support as the student works toward developing independence.

Teaching Activities

4WS8A: Using a range of methods to share observations and ideas such as using eye gaze, vocalisations, gesture, body language and communication systems

Students with disabilities use a variety of methods to share observations and ideas. These can include eye gaze, body language, facial expressions, vocalisations and communication systems. During structured and non-structured learning activities teachers need to use their in-depth knowledge of their students to identify when and how students are sharing their observations and ideas.

Some examples of students demonstrating this indicator are listed below.

- A student in a wheelchair enjoys watching and interacting with their peers. When a staff member begins to move the wheelchair the student begins to smile/laugh/make vocalisations. This indicates the student is sharing the idea they are happy about being moved.
- A student flinches or puts their hands to their ears when a balloon is blown up. They are sharing the idea that the balloon may burst.
- A student hears thunder or sees storm clouds. The student may display emotions including anxiety or pleasure. They may gesture towards the sky or use vocalisations. This indicates that they are sharing their observations of their immediate surroundings.
- A student may display excitement or displeasure when they observe a staff member getting their swimming equipment and clothing ready for a regular hydrotherapy

session. The student is making an observation that they will be going swimming soon.

Websites that contain resources, games or activities that could be used to support this goal include:

Drawing for color pen, doodle, graffiti



Prolo2go



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Students communicate by:

Syllabus Indicator 9: Working in groups to reflect on what they found interesting, liked or disliked about what they did, what was or was not expected and what they would do differently.

Framework Indicators

4WS9A: Demonstrates a like or dislike for an event

4WS9B: Matches to sample expected activities within a familiar event

Teacher Language

Give an instruction

SN, when we go (event) we (activity), find the same?

Correction/prompt

This is the (activity).
Try again.

Students will be able to achieve this indicator with varying levels of support. Fade this support as the student works toward developing independence.

There are a variety of acceptable ways a student can indicate a choice or make a response. These include; head/physical movements (e.g. nodding, pointing and reaching), facial expression, eye gaze, vocalisations and/or verbal responses.

For the purpose of these teaching activities events could include:

- *Weekly swimming lessons*
- *Assembly*
- *Community Access*
- *Weekly sporting lessons*

Teaching Activities

4WS9A: Demonstrates a like or dislike for an event

Students accessing this framework may very clearly indicate likes, dislikes and preferences for an event in different ways. These may include obvious enjoyment of being involved in the event. Likewise students may indicate obvious dislike for events through facial expressions, gestures, vocalisations and/or behaviours. Teachers should use their professional judgement when interpreting these responses and support them by using

appropriate teacher language that would reinforce what the student was indicating about the event.

4WS9B: Matches to sample expected activities within a familiar event

For this activity it is important to use visual representations of activities that happen within an event the students are familiar with. For example if the event was a weekly swimming lesson activities that could be represented by visuals could include getting the swimming bag, wearing swimmers, entering the pool, putting on a floatation device, participating in the lesson, leaving the pool.

Place the visual representation of the event including the activities in the student's direct view. The teacher would support this activity by pointing to an activity and stating 'SN, when we go swimming we walk to the pool, find the same?' This would be repeated using all the activities that occur within the event.

Websites that contain resources, games or activities that could be used to support this goal include:

Puzzle me 2



In the kitchen



Seasons and weather! Science educational games and activities for kids in preschool and kindergarten by I learn with

