Using literacy to differentiate primary science

with Primary Connections

Read in conjunction with *How is literacy embedded in Primary Connections curriculum units?*

Primary Connections supports teachers to provide students with opportunities to develop literacy skills while learning about science. Students are supported to demonstrate their understanding of science concepts, process and skills throughout science inquiry by creating representations that draw on and strengthen literacy development. In Primary Connections Units, these representations are highlighted as a 'literacy focus'.

There are forty-two literacy foci across the suite of Primary Connections Units from F-Year 6. Each suggested literacy focus is appropriate for the science concept, science inquiry skill/s, and student year level. A range of literacy foci are suggested across the suite of Units to support the development of a range of skills and representational thinking throughout primary years of schooling.

The table below shows the most commonly used literacies in Primary Connections Units grouped according to the Australian Curriculum English and Mathematics. This table is designed to support teachers with **multi-age classes**, or a class with a **range of abilities**, to choose an alternative literacy focus suited to the skills and abilities of students.

For example, teachers might:

- Choose an alternate literacy focus within the year level grouping.

A teacher with a Year 1/2 class and is working through the Year 2 Unit *Watch it grow!* In the Unit, students are asked to create a labelled diagram of their facial features. In this case, the teacher might ask her Year 1 students to create an annotated drawing while her Year 2 students draw a labelled diagram.

- Choose an alternate literacy focus from another year level.

A teacher with a Year 3 class is working through the Year 3 Unit *Night and day*. In the Unit, students are asked to explain how night and day occur through a role-play. Instead of a role-play, higher ability students might be asked to create a digital presentation with graphics and sound.

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	Year F	Years 1 - 2	Years 3 - 4	Years 5 - 6
Literacy-Creating Texts	• **Student Science Journal** Generally, when creating texts, students use familiar words, simple sentences and drawings to record and report ideas and events. Complement with e-Resource sheets which provide graphic organisers to include in students' science journal.	• **Student Science Journal** With teacher modelling and support, students record observations directly into their journal using short sequenced texts with relevant illustrations. Complement with e-Resource sheets which provide graphic organisers to include in students' science journal.	• **Student Science Journal** Students compose short texts which contain key information and observations, accompanied with relevant illustrations. Complement with e-Resource sheets which provide graphic organisers to include in students' science journal.	• **Student Science Journal** Students independently create detailed and informative texts directly into their journal. Complement with e-Resource sheets which provide graphic organisers to include in students' science journal.
	• **Drawing** • **Annotated drawing** • **Labelled diagram** Students create a simple drawing with a verbal explanation (often transposed into writing by teacher). Some students may write familiar words and/or simple sentences with teacher support.	• **Drawing** • **Line drawing** • **Annotated drawing** • **Labelled diagram** Students create drawings. They use lines to link words (labels) to the drawing and write short sentences to describe elements of the drawing.	• **Line drawing** • **Annotated drawing** • **Annotated diagram** • **Labelled diagram** • **Force-arrow diagram** • **Cross section** Students construct detailed diagrams. They use straight lines to link labels to the drawing and write descriptive sentences.	• **Annotated drawing** • **Annotated diagram** • **Labelled diagram** • **Force-arrow diagram** • **Cross section** • **Cutaway diagram** • **Circuit diagram** Students create detailed labelled diagrams, including cross-sectional representations, to communicate their ideas.
		• **Poster** Students create a poster with simple sentences for a specific purpose or audience. Students include appropriate illustrations to support their text.	• **Poster** • **Summary** Students compose informative texts that contain key information , supporting details, and relevant illustrations.	• **Summary** • **Report** Students create detailed texts elaborating on key ideas, and analysing data to form conclusions. Images and digital resources are included where appropriate.

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	Year F	Years 1 - 2	Years 3 - 4	Years 5 - 6
Literacy- Creating Texts	• **Storyboard** • **Factual recount** Students draw two or three events in sequence with a verbal explanation (often transposed into writing by teacher). Some students may write familiar words and/or simple sentences with teacher support.	• **Storyboard** • **Factual recount** • **Flow chart** Students create a sequence of three or four events including simple sentences and illustrations.	• **Storyboard** • **Factual recount** • **Flow chart** Students create a sequence of three or more events and use simple and complex sentences to organise and link information.	• **Storyboard** • **Factual recount** • **Flow chart** Students construct detailed texts to organise data and describe processes, e.g. investigation reports incorporating third person, passive voice construction.
Literacy- Word knowledge	• **Word wall** Teacher writes key words onto class word wall at the end of each lesson. By the end of the unit the word wall displays words that are complemented with concrete objects and images.	• **Word wall** Teacher, with input from students, adds key words at the end of each lesson. By the end of the unit the word wall displays words that are complemented with concrete objects and images.	• **Word wall** Teacher and/or students add key words at end of each lesson. By the end of the unit the word wall displays words that are mostly illustrated with images. • **Glossary** Add words and definitions to class glossary in class science journal.	• **Word wall** At end of each lesson students add key vocabulary to class word wall (Individuals could add words to their own 'word wall' in their own science journal. • **Glossary** Students create and update their own glossary in their student journal.
Literacy- Interpreting, analysing, evaluating	• **Factual text** Students listen to and respond to teacher-read, age-appropriate texts. Students respond to teacher's questions verbally, by drawing, and/or writing key words to communicate their ideas.	• **Factual text** • **Procedural text** Students read short, age-appropriate texts with teacher support when necessary. Students interpret, analyse, and evaluate the content using familiar and newly acquired scientific vocabulary.	• **Factual text** • **Procedural text** Students read and respond to simple texts using new vocabulary to collect and evaluate information and record observations.	• **Anology** • **Biography** • **Information text** Students read, analyse and explain literal and implied information from texts. They select and use evidence from a text to discuss and record responses.

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	Year F	Years 1 - 2	Years 3 - 4	Years 5 - 6
Literacy- Interacting with others	• **Role-play** Students participate in role-plays to explore a scientific phenomenon.	• **Interview** Students ask simple questions (e.g. when, how, why?) to collect information from a speaker. • **Role-play** Students create and perform presentations to communicate ideas.	• **Interview** • **Oral presentation** • **Role-play** Students collaboratively plan and deliver short oral and/or multimodal presentations.	• **Interview** • **Oral presentation** • **Role-play** Students collaboratively plan, rehearse and deliver presentations incorporating graphics and sound where appropriate.
Graphic organisers **Maths: Measurement and Geometry**	• **Picture map** Students use appropriate language to describe key features of a map created by the teacher. Students work towards creating their own map.	• **Picture map** Teacher/students draw a simple map of a familiar location including labels. Students identify the positions of key features.	• **Map** Students create maps with simple scales, legends and directions to show position and pathways.	• **Map** Students use a grid reference system to describe locations. They describe routes using landmarks and directional language.
	• **Ideas map** Teacher collections and records students' ideas in class science journal. Ideas map might contain three or four branches.	• **Ideas map** Students record ideas with or without a teacher scaffold. Ideas map contains four or more branches.	• **Ideas map** Students record ideas with or without a teacher scaffold into science journal. Includes four or more branches.	• **Ideas map** Students record ideas with or without a teacher scaffold into science journal. Map contains six or more branches.
Maths: Statistics and Probability *Data representation and interpretation*	• **Picture graph** Students add images (data) to a class picture graph with one object or drawing representing one data value.	• **Picture graph** • **Column graph** Class or student teams complete graph to represent data collected. Picture graphs have one object or drawing to represent one data value.	• **Picture graph** • **Column graph** Teams or individuals complete graph and scale including data, title and labels. One object or drawing of a picture graph can represent data values larger than one.	• **Picture graph (dot plot)** • **Column graph** • **Line graph** Teams or individuals choose and construct own graph to represent collated data.

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Graphic organisers **Maths: Measurement and Geometry**	• **Table** Teacher leads whole class to organise observations into a table, modelling the creation and purpose of title and labels. When introducing to students in early years, consider a table that contains two columns and up to four rows.	• **Table** Class or teams organise observations into a table. Students add labels to rows and columns. Table contains up to three columns and up to five rows.	• **Table** Teams or individuals organise observations into a table they construct. Table contains up to four columns and five or more rows.	• **Table** Teams or individuals organise observations and data into a table they have constructed. Students create title and labels appropriate for the data.
Maths: Statistics and Probability *Data representation and interpretation*	• **T-chart** • **Sorting diagram** During a class discussion, teacher records students' ideas and observations into an enlarged graphic organiser. For example, two large hoops on floor to form sorting diagram.	• **T-chart** • **Timeline** • **Sorting diagram** • **Venn diagram** Students, as individuals or in teams, sort information or data into graphic organisers e.g. e-Resource sheets.	• **Timeline** • **T-chart** • **Venn diagram** Students, as individuals or in teams, sort information or data into graphic organisers e.g. e-Resource sheets.	• **Timeline** • **Venn diagram** Teams or individuals choose and construct most suitable graphic organisers to record and organise collected data. Digital technologies are used where appropriate.