Year 2 Science & Technology Unit 2015 All Mixed Up (PCR) Week: 9 10 Term: UNIT OVERVIEW ASSESSMENT The All Mixed Up Primary Connections unit is an ideal Students will be exposed to a number of different types way to link science with literacy in the classroom. In this of assessments during this unit. unit students will learn about materials that don't mix Diagnostic Assessment: occurs at the beginning well, and others that are difficult to separate. Through of the unit. This assessment is used to elicit All mixed up hands-on investigations, students explore how changing students' prior knowledge so that the teacher can the quantities of materials in a mixture can alter its take account of this when planning how the unit will properties and uses. progress. Formative Assessment: occurs throughout the unit at various points. This assessment type **UNIT OUTCOMES** enables the teacher to monitor students' developing understanding and provide feedback that can Knowledge and Understanding: Material World Values and Attitudes: extend and deepen students' learning. ST1-2VA – demonstrates a willingness to engage **ST1-12MW** – identifies ways that everyday materials responsibly with local, national and global issues can be physically changed and combined for a **Summative Assessment:** occurs towards the end relevant to their lives, and to shaping sustainable particular purpose of the unit. This assessment type is used determine futures. students' achievement of Science Inquiry Skills and **ST1-13MW** – relates the properties of common Science Understanding as developed throughout Working Scientifically: materials to their use for particular purposes. the unit. **ST1-4WS** – investigates questions and predictions by collecting and recording data, sharing and reflecting on **Knowledge and Understanding: Products ICLT Resources ST1-16P** – describes a range of manufactured their experiences and comparing what they and other **ABC SPLASH WEBSITE:** products in the local environment and how their know. Cooking different purposes influence their design. Working Technologically: **ST1-5WT** – uses a structured design process, everyday tools, material, equipment and techniques to produce solutions that respond to identified needs and wants. **MATERIALS NEEDED FOR UNIT RESOURCE SHEETS:** $\overline{\mathsf{V}}$ OTHER EQUIPMENT: ☑ See Primary Connections Samples of materials/ ingredients/ mixtures book 'All Mixed Up' Containers, bags, cups Butcher's paper Bowls, mixing spoons, colander, sieve, paper towels

| | UNIT AT A GLANCE | | | | |
|------|---|---|---|--|--|
| WEEK | LESSON | OVERVIEW OF TEACHING & LEARNING EXPERIENCE | ASSESSMENT | | |
| 1 | Masters of Mixing – What's my mixture? | → discuss similarities and differences between images of characters creating mixtures → explain why they think different characters are creating mixtures | Diagnostic Assessment: Elicit what students already know and understand about 'how different materials | | |
| 2 | ST1-4WS, ST1-12MW, ST1-13MW | → brainstorm what they know about mixtures and their uses *HOME CONNECTOR* → Many Mixtures investigation | can be combined, including by mixing, for a particular purpose.' | | |
| 3 | Creative Cooking ST1-4WS, ST1-5WT, ST1-12MW, ST1- 13MW | → work in teams to observe different materials being mixed together → record observations in a table and discuss them | Formative Assessment: Monitor students' developing understanding of 'how different materials can be combined, | | |
| 4 | Sometimes Slimy ST1-4WS, ST1-5WT, ST1-12MW, ST1- 13MW | →work in teams to explore what happens when cornflour is mixed with water →discuss and compare observations →identify that the properties of mixtures can depend on the quantities of materials used. | including mixing, for a particular purpose. | | |
| 5 | Fun Fluids ST1-4WS, ST1-5WT, ST1-12MW, ST1- 13MW | → work as a class to investigate what happens when oil, water and detergent are mixed together Discuss their recorded observations and make evidence-based claims | | | |
| 6 | Marvellous Mixtures ST1-4WS, ST1-5WT, ST1-12MW, ST1- 13MW | → discuss mixtures they have explored and the purposes of the mixtures → sort mixtures according to their purposes using a T-chart → describe what the term 'mixture' means | | | |
| 7 | Sifting Solids – Cook's Dilemma ST1-4WS, ST1-5WT, ST1-12MW, ST1- 13MW, ST1-16P | → make predictions about how mixtures can be separated → investigate what mixtures can be separated using different tools | Summative Assessment: Assess students' ability to plan and conduct an open investigation. These tasks are | | |
| 8 | Sifting Solids – Can we sift it? ST1-4WS, ST1-5WT, ST1-12MW, ST1- 13MW, ST1-16P | → represent the results of their investigation through a game → make evidence-based claims about separating mixtures. | designed to challenge and extend students' science understanding and science inquiry skills. | | |
| 9 | Interesting Ink ST1-4WS, ST1-5WT, ST1-12MW, ST1- 13MW, ST1-16P | → make predictions about how black inks can be separated → work in teams to investigate what different black inks are made of | | | |
| 10 | Musing on Mixtures ST1-4WS, ST1-5WT, ST1-12MW, ST1- 13MW, ST1-16P | → brainstorm a new ideas map about mixtures → complete a page about a mixture for a class book. | Summative Assessment: Exploring evidence of the extent to which students understand 'how different materials can be combined, including mixing, for a particular purpose.' | | |

| WEEK | LEARNING AND TEACHING ACTIVITIES | ASSESSMENT TASK | EVALUATION | RESOURCES |
|---|--|---|------------|--|
| ONE: Masters of Mixing - What's My Mixture? ST1-4WS ST1-12MW ST1-13MW | Display an enlarged copy of 'Mix Masters' and ask students to identify what is similar & different about what is happening in the 3 pictures. Questioning: 1. What is similar about the pictures? 2. What is different? 3. What about? 4. Is there anything else? 5. Did you notice that? Display an enlarged copy of 'Looking in the Bowl' and model how to record ideas about what is occurring. Independent Activity: Record ideas on 'Looking in the Bowl' resource sheet. On a large piece of paper write the word Mixtures in the centre. Create an ideas map about mixtures and their uses in the laundry we find them in the kitchen to eat to clean We find them in the kitchen We make them in the classroom in the kitchen Ask students what questions they have about mixtures and their uses, and record them PLENARY: Discuss key words from the lesson and add them to the word wall | Assessment: (ST1-4WS, ST1-12MW, ST1-13MW) Explore what students know about mixtures and their uses – record in science journals in the form of a concept map. | | → Mix Masters (R.S. 1) enlarged copy → Looking in the Bowl (R.S. 2) enlarged copy → Butcher's Paper → Word wall cards |

| | KLA LINK: English – Read George's Marvellous Medicine by Roald Dahl | | | |
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| WEEK | LEARNING AND TEACHING ACTIVITIES | ASSESSMENT TASK | EVALUATION | RESOURCES |
| TWO: Masters of Mixing - Many Mixtures ST1-4WS ST1-12MW ST1-13MW | □ Brainstorm with students some examples of mixtures they might use at home – Examples muesli, seed mix, salad or paint. Record answers. □ Introduce the 'Information Note for Families' and read through it with students. □ Discuss how students might ask family members to help them find mixtures, determine what is in mixtures and what they are used for. □ Discuss how packaging can provide clues as to if the items are mixtures. □ Introduce the 'My Mixtures' activity sheet and discuss how students will use it to record information. Discuss the purpose and features of table. □ Model how to record a written observation. □ Explain the due date for the observations and record in diary. PLENARY: □ Discuss key words from the lesson and add them to the word wall | Assessment: (ST1-4WS, ST1-12MW, ST1-13MW) Students observe, record and report on mixtures that they can see around their homes. | | →Information note for families →My Mixtures activity sheet →Word wall cards |

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|---|--|---|------------|---|
| THREE: Creative Cooking ST1-4WS ST1-5WT ST1-12MW ST1-13MW | Introduce the three ingredients and describe appearance/smell. NB: remind students to not touch or smell substances. Cocoa powder Icing sugar Rice puffs Introduce the 'Crazy Cooking' recording sheet. Explain that groups will be creating each of the mixtures described. Make predictions about what will happen/ change. Demonstrate how to use a tablespoon to measure out substances, place them in a cup and mix them together. Brainstorm a list of words students might use to describe their mixtures and add them to the word wall → smooth, gritty, brown, white, lumpy Model recording observations using an annotated drawing → discuss the features and purpose of an annotated drawing (to show an idea or object and includes pictures, words and/or descriptions). Collaborative Learning Groups: Divide students into groups of about 3 or 4 Allow time for teams to complete their investigations. Questioning: How would you describe? How is it different to? How is it different to? How is it similar to? What might this mixture be used for? Did it remind you of other mixtures? What are they used for? PLENARY: Discuss key words from the lesson and add them to the word wall Discuss how mixtures are used for cooking | Assessment: (ST1-4WS, ST1-5WT, ST1-12MW, ST1-13MW) Students examine how different materials can be combined, including by mixing, for a particular purpose. | | → Crazy Cooking recording sheet → Word wall cards → Cocoa powder → Icing Sugar → Rice Puffs → plastic cups → tablespoons → Word wall cards |

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| FOUR: Sometimes Slimy ST1-4WS ST1-5WT ST1-12MW ST1-13MW | □ Discuss the purpose and features of a procedural text (to find out how something is done – title, materials, steps, labelled diagrams). □ Introduce the 'Just Add Water' procedural text. ■ Model completing the steps □ Collaborative Learning Teams: ○ Form teams ○ Allow teams time to make their observations and record them in their science journals ○ Discussion: | Assessment: (ST1-4WS, ST1-5WT, ST1- 12MW, ST1-13MW) Students examine how different materials can be combined, including by mixing, for a particular purpose. | | →Just Add Water text →cornflour →water →bowl →tablespoon →Word wall cards |

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| FIVE: Fun Fluids ST1-4WS ST1-5WT ST1-12MW ST1-13MW | □ Discuss why scientists might be interested in studying oil and water → such as oil spills □ Explain that we will investigate what happens when oil, water and detergent mix together. □ Read Slick Oil and discuss how students will compare the substances when mixed together. □ Predict what will happen when each mixture is made. Record predictions. □ Complete activity, inviting volunteers to make each mixture. □ Questions: ○ What happened when? ○ What did you notice? ○ What have we learned about mixtures? ○ Did our results match our predictions? Why do you think that? □ Discuss liquids that mix well with water and those that don't. PLENARY: □ Discuss key words from the lesson and add them to the word wall | Assessment: (ST1-4WS, ST1-5WT, ST1-12MW, ST1-13MW) Students examine how different materials can be combined, including by mixing, for a particular purpose. | | → Slick Oil sheet → vegetable oil → water → dishwashing detergent → cups → paddle pop sticks → measuring cup → table covering → Word wall cards |

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|--|--|---|------------|------------------------------------|
| SIX: Marvellous Mixtures ST1-4WS ST1-5WT ST1-12MW ST1-13MW | Review the mixtures students discovered at home. Questions: How do we know it is a mixture? What is the mixture used for? Brainstorm ways we could group the mixtures and record ideas → e.g. colour, texture, uses, size of grains Introduce a <i>T Chart</i> on butcher's paper and explain that we are going to sort mixtures according to their purpose. Brainstorm some uses that could be used as headings for the T chart such as – to eat, to clean or to have fun Are there purposes that we have not represented here? Which ones? What other mixture can you think of for this group? Write the term <i>Mixture</i> and describe what students think the term means. Record an agreed definition. Ask: According to our definition, is a mixture? Can you think of other examples of mixtures? Are there other ways in which the word 'mixture' is use? What about mix? How can we make sure something is a mixture? What do we know about mixtures? PLENARY: Discuss key words from the lesson and add them to the word wall | Assessment: (ST1-4WS, ST1-5WT, ST1-12MW, ST1-13MW) Students examine how different materials can be combined, including by mixing, for a particular purpose. | | →Slick Oil sheet →Word wall cards |

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| SEVEN: Sifting Solids – Cook's Dilemma ST1-4WS ST1-5WT | □ Review previous lessons and discuss the usefulness of mixtures and how their properties change depending upon the relative amounts of their substances or ingredients. □ View the bowls of mixture and ask students to identify the ingredients in them → three bowls each with 3 tablespoons each of icing sugar, cocoa powder, coconut and puffed rice □ What could we do if someone was allergic to one of the ingredients? How would we remove it? □ Introduce the colander, sieve and paper towel. Describe how they are used. What is the same/ different about each sieve and the paper towel? □ Introduce question 'Does the size of the sieve holes affect what can be separated in a mixture?' □ Introduce investigation planner: □ Question: Does the size of the sieve holes affect what can be separated in a mixture? □ We will change – size of sieve holes □ We will change – size of sieve holes □ We will keep the same – the type of mixture □ Introduce enlarged copy of 'Sifting Investigation Results' □ Have students predict what they think will happen and why. PLENARY: □ Discuss the results of the investigation: ○ Which sieve let the largest-sized ingredients through? Why did that happen? ○ Wat is the answer to our question 'Does the size of the sieve holes affect what can be separated in a mixture?' What evidence do we have for our answer? ○ Discuss why people sieve mixtures. □ Discuss key words from the lesson and add them to the word wall | | | →3 tablespoons icing sugar →3 tablespoons cocoa powder →3 tablespoons coconut →3 tablespoons puffed rice →3 large mixing bowls →1 mixing spoon →plastic tablecloth →1 colander →1 sieve →1 piece of paper towel →1 jar → sifting investigation results sheet |

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| EIGHT: Sifting Solids – Can we sift it? ST1-4WS ST1-5WT ST1-12MW ST1-13MW ST1-16P | □ Review previous lessons investigation □ Discuss how we can represent our findings using a whole class role play. □ Introduce the 'Sifting Game Labels' – pegs used to attach labels to clothes. □ Explain the game: ½ class given randomly selected labels & clothes pegs (represent ingredients in a mixture) ○ Other ½ form a circle and join hands ○ Call 'All Mixed Up' ingredients students enter the circle and walk around randomly to represent being mixed together ○ Call 'Colander', 'Sieve' or 'Paper Towel' and hold up an example. Students think about whether their ingredient would pass through it, and if it does they leave the circle □ Repeat the game several times, giving students the opportunity to participate at least twice as different ingredients PLENARY: □ Discuss the results of the game: ○ What did the game represent well about our investigation? ○ What did the game not represent? ○ Could you separate that mixture into all its parts? ○ What kinds of mixtures can you separate? ○ Discuss key words from the lesson and add them to the word wall | Assessment: (ST1-4WS, ST1-5WT, ST1-12MW, ST1-13MW, ST1-16P) Students examine how different materials can be separated from a mixture. | | → 1/2 cup icing sugar in clear plastic container/ bag → 1/2 cup coconut in clear plastic container/ bag → 1/2 cup of cocoa powder in clear plastic container/ bag → 1/2 cup puffed rice in clear plastic container/ bag → Sifting game labels → 1 colander → 1 sieve → 1 piece of paper towel → completed copy of previous lessons worksheet → Word wall cards |

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|--|--|---|------------|---|
| NINE: Interesting Ink ST1-4WS ST1-5WT ST1-12MW ST1-13MW ST1-16P | Review previous investigation Introduce the 'Travelling Ink' sheet and discuss with students. Model how to perform each step. Brainstorm things that might affect what happens to the ink of the pens and record answer on sticky notes. Introduce investigation planner: Question: What are different black inks made of? We will change – the type of ink We will observe – what happens to the ink We will keep the same – the type of filter paper, the amount of water, where the ink is put on the paper, how the paper is held and how long the paper is dipped into the water Collaborative Learning Teams: Form teams Allow groups time to complete the investigation PLENARY: Discuss the results of the investigation: What did we learn? Which inks were similar? Which inks were different? What could this be used for? Discuss key words from the lesson and add them to the word wall | Assessment: (ST1-4WS, ST1-5WT, ST1-12MW, ST1-13MW, ST1-16P) Students plan and conduct an investigation of what different black inks are made of | | →Travelling Ink sheet Each team will need: →1 blank piece of A4 paper →1 cup →2 strips of filter paper / paper towel →2 different felt tip pens with soluble black ink →plastic tablecloth →water →Word wall cards |

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|---|---|---|------------|-------------------|
| TEN: Musing on Mixtures ST1-4WS ST1-5WT ST1-12MW ST1-13MW ST1-16P | Review previous lessons and revisit the ideas map created in Lesson 1. Asking questions such as: Do you still think that? What do you think now? Why? Have we learned more about? Does this fit our description of a mixture? Why do you think that is? Introduce the 'Mixed Up' sheet and model how to record thinking in the areas of → The mixture is; This is a mixture of; This mixture is used for NB: You could use mobile devices to allow students to represent their understanding electronically whilst also creating a multimodal text that includes words, pictures and possibly even audio. Using apps like Tellagami, Educreations or Book Creator etc. Introduce a variety of mixtures for students to use in task. PLENARY: Discuss the learning from the unit: | Assessment: (ST1-4WS, ST1-5WT, ST1-12MW, ST1-13MW, ST1-16P) Students demonstrate how different materials can be combined, including by mixing, for a particular purpose | | → Word wall cards |



Our Lady of the Rosary Catholic Primary School

O.L.R.

ALIVE AND AWARE

Our Lady of the Rosary Catholic Primary School

July 2015

Introducing the 'My Mixtures' Project

This term Year 2 will be exploring everyday mixtures and their uses. As part of the science unit All Mixed Up, your child will investigate simple mixtures in their home. Examples of simple mixtures in the home might include breakfast cereals, seed mix and detergent mixed with water.

Your child is asked to complete the 'My Mixtures' resource sheet and are also encouraged to take photos, draw pictures and bring some of the items to school for display.

Please make sure you reinforce that some mixtures might be poisonous and they are not to taste, smell or eat anything unless they are given adult permission.

Students will be asked to share their observations with their classmates on **Friday 14**th **August**.

Kind Regards,

Mrs Alice Vigors and Mrs Louise Bailey Year 2 Class Teachers July 2015

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| Name: Find some simple mix | Name: My Mixtures Find some simple mixtures around your home. Write and draw your answers. | | | | | | |
|-----------------------------|--|--------------------------|-----------------------------|-------------------------|--------------------------|--|--|
| What is the mixture called? | What is in the mixture? | What is the mixture for? | What is the mixture called? | What is in the mixture? | What is the mixture for? | | |
| cup of black tea | tea-leaves water sugar | to drink | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

| soft | hard | lumpy |
|--------|----------|----------|
| gooey | runny | smelly |
| yummy | milky | wet |
| sticky | cooking | baking |
| mixing | stirring | mixtures |

| 900 | slime | squishy |
|---------|---------|---------|
| slimy | cool | hot |
| rough | smooth | bumpy |
| crunchy | oil | water |
| absorb | sifting | bowl |