

Tapstar Saves the Waterways Education Program

Teacher resource book
Years K to 6



Acknowledgements

Tapstar Waterwise Education Program aims to give students a sound understanding of water in our environment and the need to conserve the quality of this precious resource.

Shoalhaven Water has created an education program that incorporates a 40 minute play and complimenting lessons to educate children on what happens to water as it enters drains and sinks and how our behaviour can affect the quality of water that ends up in our waterways. The teaching kit and performance was produced by Eaton Gorge Theatre Company (EGTC).

This resource has been developed to promote the water quality within NSW through educating students in stages 1 – 3 at Primary School.

The contribution of those listed below was highly valued and is gratefully acknowledged:

- Carmel Krough, Shoalhaven Water, Director
- Tony Holmes, Shoalhaven Water, Business and Support Manager
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Special mention is given to the following local schools whose staff and students participated in workshops and in the scoping and/or review process. The comments provided were invaluable.

- Huskisson Public School
- Nowra Public School
- St Michaels Catholic School
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This teachers kit is designed to be used as a complimentary program to 'The Tapstar Saves the Waterways' play to educate children in preserving water quality.

Introduction

Local Government Councils are the service providers for water supply in most parts of Country NSW. This responsibility includes ensuring that water quality is maintained within waterways and, in the Shoalhaven protecting precious water resources. The “Tapstar” character is a well known water conservation hero in the Shoalhaven area, and it was decided to utilize the character in this next phase of water education.

Tapstar Waterwise Education Program now includes a new live performance “Tapstar Saves the Waterways” and teaching kit that will help to fill an important gap in water quality education. This is a resource that has been produced for Primary School teachers within New South Wales.

This resource kit may be used in conjunction with the performance “Tapstar Saves the Waterways” that has been written and produced under the direction of Shoalhaven Water. The performance offers an excellent lead into many of the activities included in this kit.

This kit has been written for teachers or educators to dip into on a selected water topic. It consists of three lesson plans and complimentary worksheets (blackline masters) for stages 1, 2 and 3. The lesson plans have been constructed so that the students will achieve outcomes from the NSW Syllabus. These outcomes have been highlighted on each of the lesson plans to allow for easy assimilation into the classroom.

The benefits of this education program will be the conservation of our precious drinking water and the protection of our environment. It will also enhance the image of schools as they are seen to be environmentally conscious and aware of sound water conservation outcomes. This will ensure the active and informed participation of the community in creating a sustainable future.

Program Overview

This document contains lesson plans to be used in conjunction with The Tapstar Saves the Waterways play.

There are two sets of lesson plans incorporated into the lesson plan package.

A set of introductory and also a set of consolidation lessons for Stages 1, 2 & 3.

The aim of the introductory lessons is for the students to be taught prior to the performance of the Tapstar play at the student’s school, in order to prepare the students and provide important prior knowledge of the subject area to be covered by the play.

The consolidation lessons are to be taught after the performance with the aim to consolidate information, ideas and concepts introduced and presented by the play. It is also hoped that these lessons will encourage further interest and research into the subject area.

The educational kit is also accompanied by the Tapstar Resource Kit to assist in the presentation of the following lessons.

Program overview

Stage One Outcomes

INVES1.7	investigates their surroundings by observing, questioning, exploring and reporting
INVS1.7	conducts guided investigations by observing, questioning, predicting, collecting and recording data
VA5	works co-operatively with others in groups on scientific and technological understanding
DES1.1	represents and interprets data displays made from objects
DS1	gathers and organises data, displays data using various means and interprets information
ESES1.6	explores and identifies ways the environment influences their daily lives
ESS1.6	identifies and describes ways in which people and other living things depend upon the earth and its environment
ENS1.6	demonstrates an understanding of the relationship between environments and people
VAES1.1	makes simple pictures and other artworks about things and experiences
VAS1.1	makes artworks in a particular way about experiences real or imagined

Stage Two Outcomes

INVS2.7	conducts investigations by observing, questioning, predicting, testing, collecting, recording and analysing data and drawing conclusions
RS2.9	with teacher guidance, gathers and sorts information on a topic from a variety of sources
VA2.5	works co-operatively in groups on scientific tasks and challenges
ENS2.6	describes people's interactions with environments and identifies responsible ways of interacting with environments
DS2.1	gathers and organises data, displays data using tables, column graphs and interprets the results
LTS2.3	identifies and describes the ways in which living things interact with their environment

Program overview

Stage Three Outcomes

- INVS3.7 conducts investigations and makes judgments based on observing, questioning, planning, predicting, testing, collecting and analysing data and drawing conclusions
- VAS3.5 works co-operatively with others in groups on scientific tasks and challenges
- UTS2.9 evaluates, selects and uses a range of equipment, computer based technology, materials and other resources to meet the requirements and constraints of investigation tasks
- DS3.1 displays and interprets data in graphs

Stage 1

Lesson 1

Help Tapstar explore the world of drains.

Resources

- Gardening gloves or rubber dishwashing gloves
- Bags for collecting litter
- Boxes for sorting / storing the litter collected in the playground
- Tapstar resource materials
- Textas / coloured pencils
- Large piece/s of blank paper or cardboard that can be used to create a collage or class display

Introductory Lesson Learning Activities

Students collect litter from the school playground after recess or lunch. They then return to the classroom and as a class group study and discuss the types of litter that they have collected.

The teacher then poses the question to the students:
If we don't put our litter in the bin, where does it go?

Brainstorm ideas / discuss / record on board

Explain:

It rains and the litter gets washed down into the drain. The teacher writes the word drain in big letters on the large piece of blank paper.

Discuss:

- What is a drain?
- What does a drain do?

Students then locate / identify drain/s in the classroom. Students discuss / identify other areas where drains may be found?

In other classrooms, the staffroom, the toilets, in the home, in buildings etc.

Students discuss:

What types of things do we put down the drain?

Teacher / students create a class drain collage / display:

Record all the information the students have gathered and discovered during the lesson.

Refer to collage reference sheet for ideas.

The collage / display is intended to be an ongoing activity to be developed further after the "Tapstar" performance at the school.

Stage 1

Lesson 2

Help Tapstar explore the world of drains.

Resources

- Tapstar Water Quality play Resource Kit
- Tapstar characters photocopied and laminated (if possible)
- Wastings household resource sheets photocopied to A3 size and laminated (if possible)
 - Kitchen
 - Bathroom
 - Garden
- Laminated drain images
- Blue tac

Learning Activities

Students discuss the Tapstar Water Quality play.

Discuss / share:

What was their favourite part/s of the play?

Who was / were their favourite characters?

Identify / display the characters, using the laminated characters as a resource.

Students brainstorm information that they have learnt from the play.

Teacher records the student's information onto butcher's paper, blackboard, or whiteboard etc

Using the Wastings household resource sheets, teacher / students work through each of the rooms in the Wasting's home:

The Bathroom:

Identify where you would find drains in the bathroom i.e. toilet, sink, bath

Teacher attaches laminated drains to the resource sheet.

Discuss:

What sort of things does Oscar put down the toilet?

What other items do people often wash down the drains in the bathroom?

Teacher lists / records the various items identified by the students for future reference eg. hair, nail clippings etc

The Kitchen:

Identify where they would find drains in the kitchen i.e. sink, dishwasher

Attach laminated drains as identified to the kitchen resource sheet.

Discuss:

What sort of items does Mrs Wastings put down the drain in the kitchen?

What other items might people wash down the kitchen drain or dishwasher drain? eg. food scraps, oil down the sink, food scraps & sauces in the dishwasher.

Stage 1

Lesson 2

Help Tapstar explore the world of drains.

The Garden:

Identify where they would find drains in the garden, front yard, road i.e. storm water drain at the front of their house

Attach laminated drains as identified to the garden resource sheet

Revise: The difference between a normal drain as found inside a house or building and a storm water drain?

Discuss:

What sort of items did Mr Wastings intend to put down the storm water drain?

What other items might people wash down the storm water drain?

Teacher lists / records the various items identified by the students for future reference i.e. dirty motor oil, soapy water, detergent, brake fluid down the storm water drain.

Extension Activities:

- Create a class big book based on the collage
- Write a letter to Tapstar telling them about what they have learnt from the play
- Create their own artwork depicting what they learnt from the play
- Learn Tapstar songs
- Using the Tapstar song / play as motivation, students create / improvise their own play

Further discussions:

What problems does the Tapstar play tell us will happen if these items are washed down into the drains?

- They tell us that the drains will become blocked and cause ooze and slime which is an unhealthy home environment and also causes pollution of the environment.
- It is expensive to fix and clean the pipes and it's important to have clean clear pipes so that we can have clean, safe water.

Students can then:

- Demonstrate what happens to the drains using laminated drain resource as an aid.
- Complete resource sheet demonstrating what will occur if they put unsuitable items down the drains.
- Write an explanation based on the above topic.
- Discuss how can we help keep our drains clear and water safe to drink at home and at school?

All the above resource materials may then be added to complete the class collage "DRAINS".

Stage 2

Lesson 1

Help Tapstar and his friends investigate the world of drains.

Resources

- Gardening gloves or rubber dishwashing gloves
- Bags for collecting litter
- Boxes for sorting / storing the litter collected in the playground
- Tapstar resource materials
- Textas / coloured pencils
- Large piece/s of blank paper or cardboard that can be used to create a collage or class display

Introductory Lesson Learning Activities

Students collect litter from the school playground after recess or lunch. They then return to the classroom and as a class group study and discuss the types of litter that they have collected.

Record the above information in the form of a column graph on cardboard for display.

The teacher then poses the question to the students:
If we don't put our litter in the bin, where does it go?

Brainstorm ideas / discuss / record on board

Explain:

It rains and the litter gets washed down into the drain. The teacher writes the word drain in big letters on the large piece of blank paper.

Discuss:

- What is a drain?
- What does a drain do?

Students then locate / identify drain/s in the classroom. Students discuss / identify other areas where drains may be found?

In other classrooms, the staffroom, the toilets, in the home, in buildings etc.

Using magazines and the internet find pictures of different types of drains.

Students discuss:

What types of things do we put down the drain?

Teacher records the student's ideas on the paper for reference. In pairs or small groups, students complete an activity sheet using the class reference sheet.

Teacher / students create a class collage / display:

DRAINS - Record all the information that they have gathered and discovered during the lesson. Refer to collage reference sheet for ideas.

The collage / display is intended to be an ongoing activity to be developed further after the "Tapstar" performance at the school.

Stage 2

Lesson 2

Help Tapstar and his friends investigate the world of drains.

Resources

- Tapstar Water Quality play Resource Kit
- Tapstar characters photocopied and laminated (if possible)
- Wastings household resource sheets photocopied to A3 size and laminated (if possible)
 - Kitchen
 - Bathroom
 - Garden
- Laminated drain images
- Blue tac
- Class collage for reference

Learning Activities

Students discuss the Tapstar Water Quality play.

Discuss / share:

What was their favourite part/s of the play?

Who was / were their favourite characters?

Identify / display the characters, using the laminated characters as a resource.

Students brainstorm information that they have learnt from the play.

Teacher records the student's information onto butcher's paper, blackboard, or whiteboard etc

Students then review/ discuss what they have remembered from the play.

Students then break into three groups with each group allocated an area in the Wasting's house covered in the play ie. the kitchen, the bathroom or the garden.

Using the Wasting's household resource sheets, each group discusses and completes the following activities:

The Bathroom

Using the play as a reference, students identify where they think they would find drains in the bathroom ie. toilet, sink, bath

Students attach laminated drains to the bathroom resource sheet

Students discuss/list:

What sort of things does Oscar put down the toilet?

What other items do people often wash down the drains in the bathroom? eg: hair, nail clippings, dental floss, cotton buds etc

Stage 2

Lesson 2

Help Tapstar and his friends investigate the world of drains.

The Kitchen

Using the play as a reference, students identify where they would find drains in the kitchen i.e. sink, dishwasher
Students attach laminated drains to the kitchen resource sheet

Students discuss/list:

What sort of items does Mrs Wastings put down the drain in the kitchen?

What other items might people wash down the kitchen drain or dishwasher drain? eg: food scraps, oil down the sink, food scraps & sauces in the dishwasher

The Garden

Using the play as a reference, students identify where they would find drains in the garden, front yard, road, that is, the storm water drain on the road at the front of their house

Students discuss / record / list:

- What is the difference between a normal drain, as found inside a house or building, and a storm water drain?
- What sort of items did Mr Wastings intend to put down the storm water drain?
- What other items might people wash down the storm water drain? eg: dirty motor oil, soapy water, detergent, brake fluid down the storm water drain?

Each of the three groups report their findings to the class.

Further discussions:

What problems does the Tapstar play tell us will happen if these items are washed down into the drains?

- They tell us that the drains will become blocked which can create an unhealthy home environment and also cause pollution to the environment.
- It is expensive to fix and clean the pipes and it's important to have clean clear pipes so that we can have clean safe water.

Stage 3

Lesson 1

Help Tapstar prevent blocked drains.

Resources

- Gardening gloves or rubber dishwashing gloves
- Bags for collecting litter
- Boxes for sorting / storing the litter collected in the playground
- Tapstar resource materials
- Textas / coloured pencils
- Large piece/s of blank paper or cardboard that can be used to create a collage or class display
- Computer
- Tapstar website

Introductory Lesson Learning Activities

Students collect litter from the school playground after recess or lunch. They then return to the classroom and as a class group study and discuss the types of litter that they have collected.

Students record the above information using a pie graph on cardboard for display.

The teacher then poses the question to the students:

If we don't put our litter in the bin, where does it go?

Brainstorm ideas / discuss / record on board

Explain:

It rains and the litter gets washed down into the drain.

The teacher writes the word drain in big letters on the large piece of blank paper.

Discuss:

- What is a drain?
- What does a drain do?
- Where do we find drains?
- What types of things do we put down the drain?
- Where do the drains go?

Students then break into pairs or small groups.

Students complete an activity research sheet using "Tapstar" resource materials and the Shoalhaven Water website.

Students discuss / record their answers to the above questions.

Students create a power point or presentation based on the information gathered on their activity research sheet. Students share their power points or presentations with the class

Teacher / students create a class collage / display:

DRAINS - Record all the information that they have gathered and discovered during the lesson. Refer to collage reference sheet for ideas.

The collage / display is intended to be an ongoing activity to be developed further after the "Tapstar" performance at the school.

Stage 3

Lesson 2

Help Tapstar prevent blocked drains.

Resources

- Tapstar Water Quality play Resource Kit
- Tapstar characters photocopied and laminated (if possible)
- Wastings household resource sheets photocopied to A3 size and laminated (if possible)
 - Kitchen
 - Bathroom
 - Garden
- Laminated drain images
- Blue tac
- Class collage for reference
- Group Activity Sheet
- Clipboard
- Pencil/pen
- Paper to record ideas
- Computer
- Tapstar Education Website

Learning Activities

Students discuss the Tapstar Water Quality play

Discuss / share:

What was their favourite part/s of the play?

Who was / were their favourite characters?

Students brainstorm information that they have learnt from the play.

Teacher records the student's information onto butcher's paper, blackboard, or whiteboard etc

Students then review/ discuss the results of their brainstorming.

Students then break into three groups.

Each group is allocated an area in the Wasting's house covered in the play ie. the kitchen, the bathroom or the garden.

Using the Wasting's household resource sheets, each group discusses and completes the following activities:

The Bathroom

Using the play as a reference, students identify where they think would find drains in the bathroom ie. toilet, sink, bath
Students attach laminated drains to the bathroom resource sheet

Students discuss/record on the group activity sheet:

- What sort of things does Oscar put down the toilet?
- What other items do people often wash down the drains in the bathroom? eg. hair, nail clippings, dental floss, cotton buds etc

Students discuss / record the consequences of putting these types of items into the drain.

The Kitchen

Using the play as a reference, students identify where they would find drains in the kitchen i.e. sink, dishwasher

Students attach laminated drains to the kitchen resource sheet.

Students discuss/record on their group activity sheet:

- What sort of items does Mrs Wastings put down the drain in the kitchen?
- What other items might people wash down the kitchen drain or dishwasher drain? eg. food scraps, oil down the sink, food scraps & sauces in the dishwasher?

Students discuss / record the consequences of putting these types of items into the drain.

Stage 3

Lesson 2

Help Tapstar prevent blocked drains.

The Garden

Using the play as a reference, students identify where they would find drains in the garden, front yard, road, that is, the storm water drain on the road at the front of their house.

Students attach laminated drains as identified to the garden resource sheet.

Students discuss / record:

- What is the difference between a normal drain as found inside a house or building and a storm water drain?
- What sort of items did Mr Wastings intend to put down the storm water drain?
- What other items might people wash down the storm water drain? eg. dirty motor oil, soapy water, detergent, brake fluid down the storm water drain.

Students discuss/record the consequences of putting these types of items into the drain.

Students prepare a group presentation utilising visual aids. These could include drawings, paintings, diagrams, role playing or models to show what happens to pipes and waterways if they are not looked after.

Each of the three groups report their findings to the class in a prepared presentation.

Teacher / students then review the group findings and as a class group summarise the main ideas / concepts covered in the play.

Further discussions:

What problems does the Tapstar play tell us will happen if these items are washed down into the drains?

- They tell us that the drains will become blocked which can create an unhealthy home environment and also cause pollution to the environment.
- It is expensive to fix, clean and maintain underground and that it costs money to repair all the damage to pipes caused by blockages.
- Clean clear pipes mean clean safe water and a healthy environment. ***Students then complete an individual activity sheet:***

How can we help keep our drains clear and water safe to drink, at home and at school?

Students write an explanation / create a power point / keynote presentation:

Why should we be careful what we put down our drains?

In small groups / individually:

Students research effects on the environment from blocked drains and waterways and discuss / devise strategies that they can implement at home, at school or at their parent's work that can help keep our waterways clean.

Group development:

Prepare a presentation of their strategies for the class / school. This could include: posters, a big book, radio ads, flyers, a short film, a play or a powerpoint / keynote presentation etc

Using work from the above activities, complete the class collage "DRAIN".

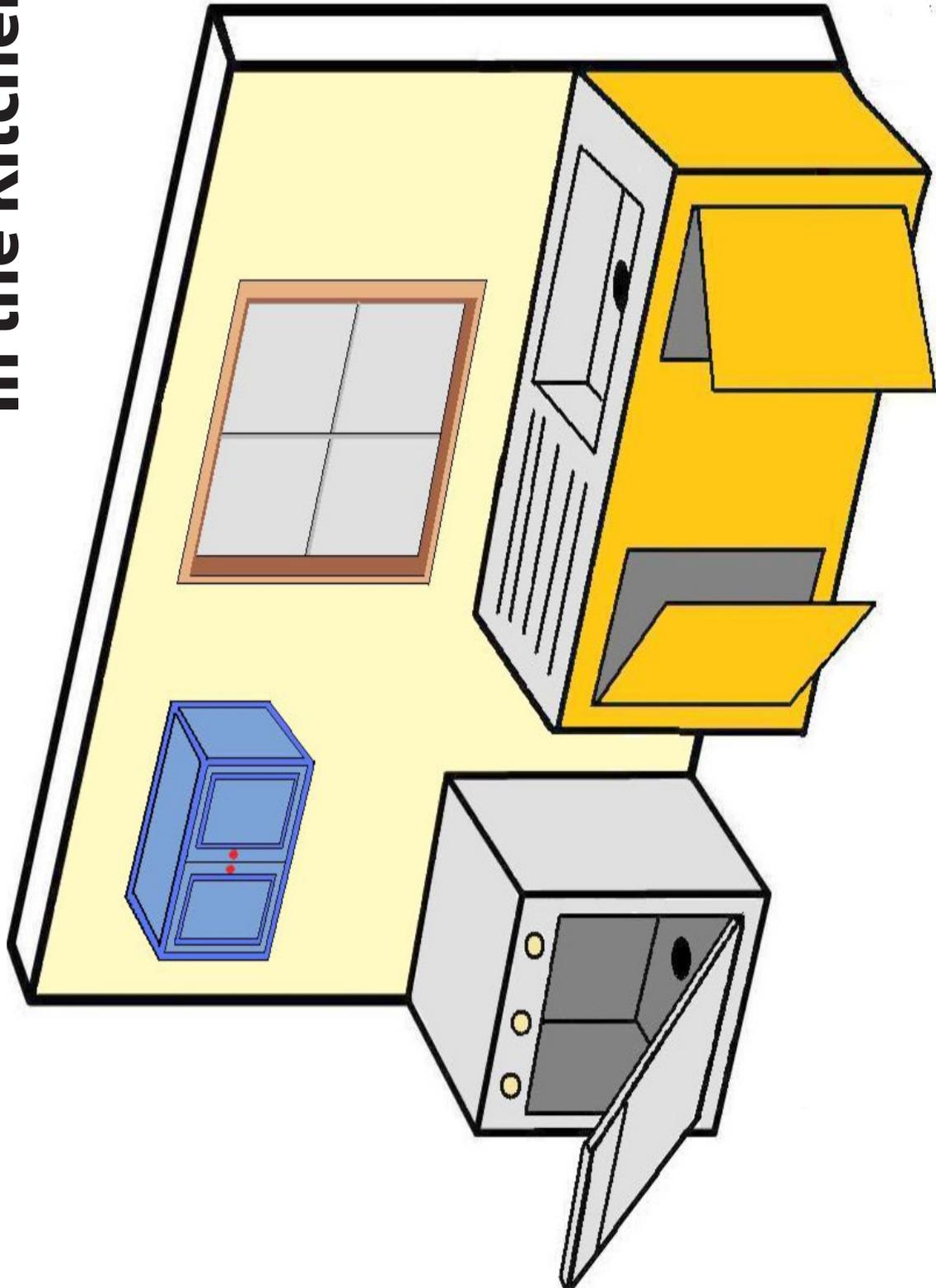
Extension Activities:

- Using the Tapstar songs as a resource, create their own songs / rap etc or artwork to convey important water quality concepts
- Explore the Tapstar Educational Website
www.shoalwater.nsw.gov.au/Community/Tapstar/Kids

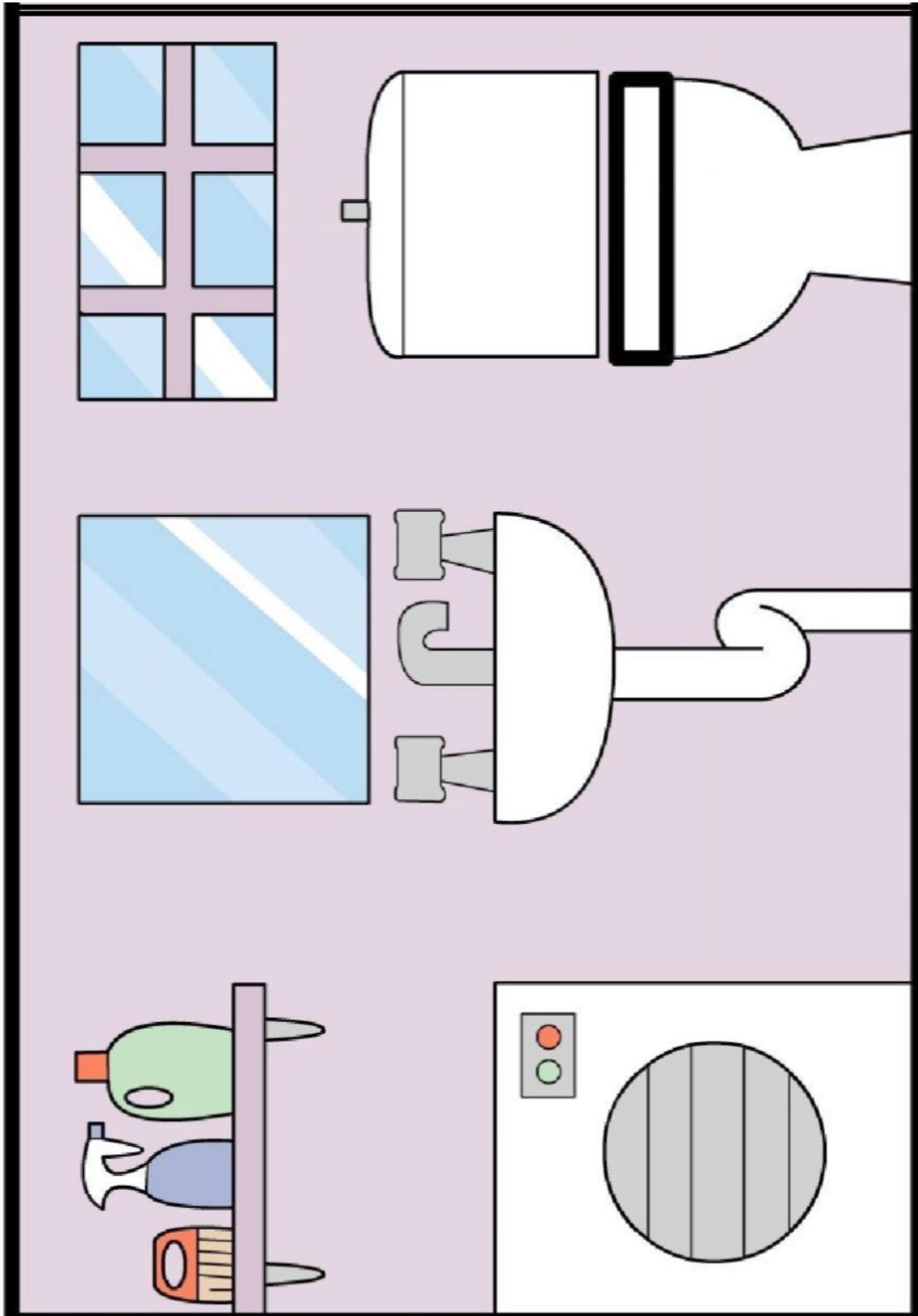


In the Garden

In the Kitchen

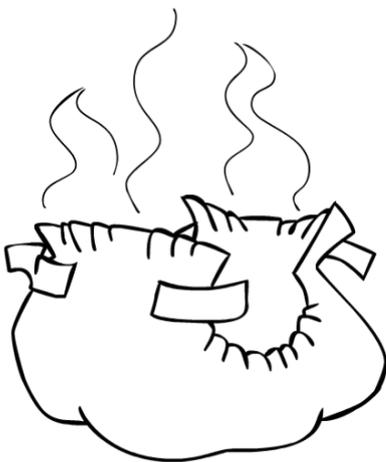
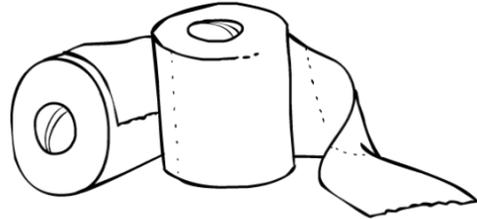
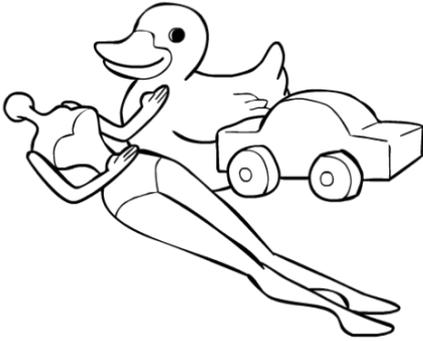


In the Bathroom



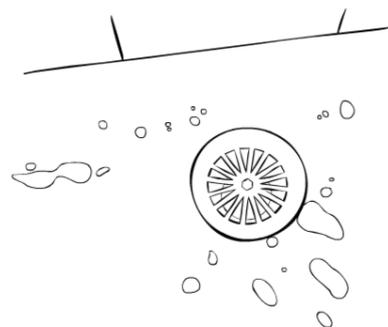
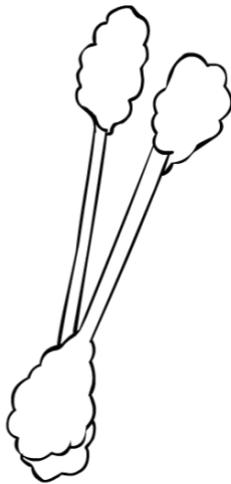
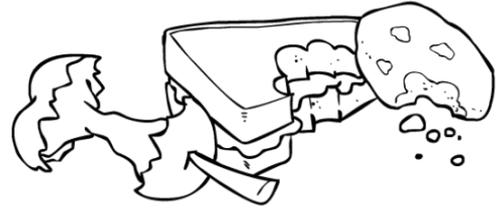
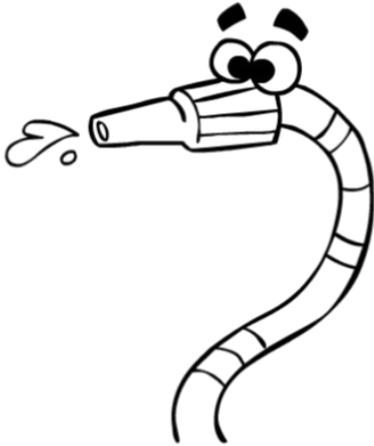
Support Material

Complimentary Lesson Plans



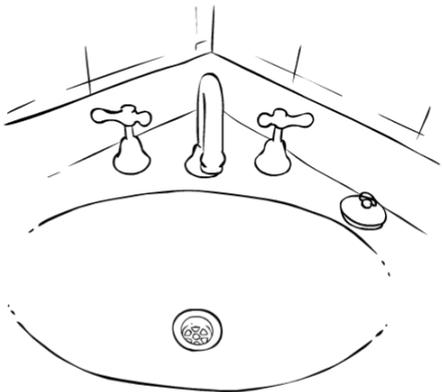
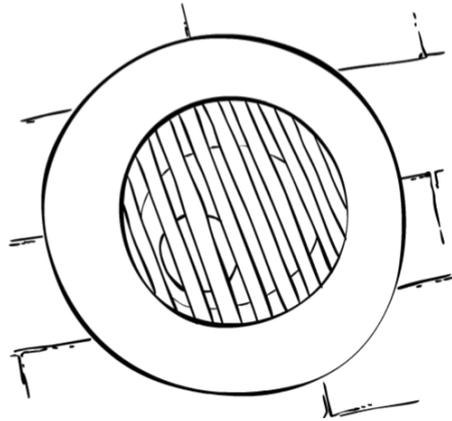
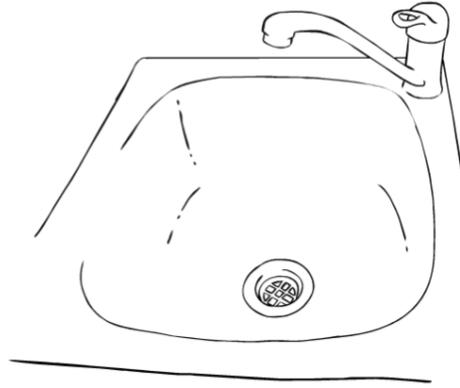
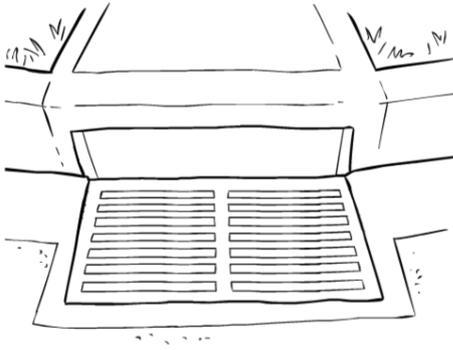
Support Material

Complimentary Lesson Plans



Support Material

Complimentary Lesson Plans

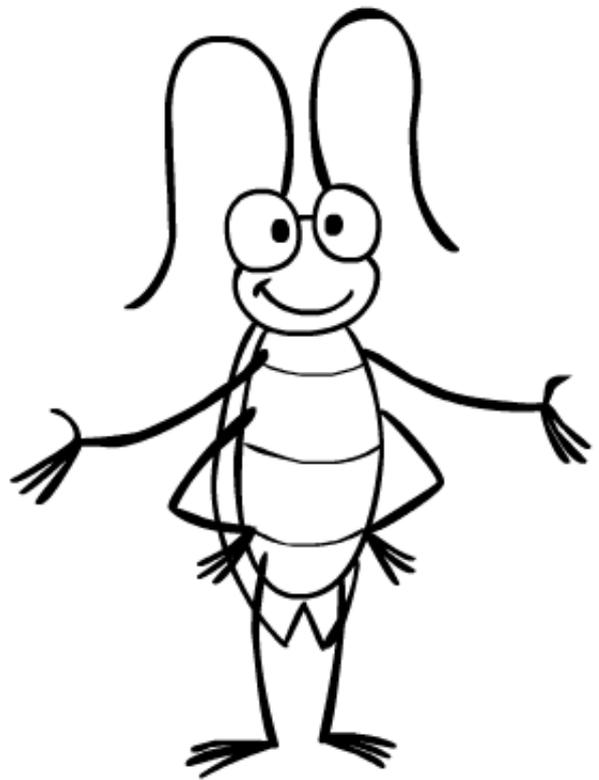


(To the La Cucaracha—the Mexican Cockroach Song)

We like it slimy and very greasy
Keep it up for us to stay
We'll have a party, invite our neighbours
Cocky's love the sewer sludge

We're cock – a - roaches
We're no slow coaches
We'd love to move into your house
Just make it gre-asy
So if you plea-sy
Use your toilet as a bin

We're nasty in-sects
In every re-spects
If you don't want us around
Just make it cleaner
We won't be seener
Don't put rubbish down the drain



Families use the kitchen sink but listen and beware
Put the wrong thing down it and you will get a scare
Olive oil and tea bags, flour, rice and carrots
Spaghetti, ink and marshmallows, vegetables and salads
All that stuff I mentioned don't go down like it ought'a
The only stuff to go in is fresh or soapy water

Give me a W
Give me a A
Give me a T
Give me a E
Give me a R
What does it spell? WATER

Now let's look at our water pipes, they take the waste away
But pour the wrong things down it and cocky's come and play
Pesticides and Car oil, paint and little sticks
Rubber bands and marbles, tin and wood and bricks
All that stuff we mentioned will make the pipeline splutter
The only stuff that goes in is water from the gutter

Repeat chorus

We all use the toilet some use it as a bin
What ends up in the sewer is really quite a sin
Cotton buds and tennis balls, band aids, hair and shavers
Goldfish, hats, matchbox cars, rubber ducks and lasers
All that stuff we mentioned has trouble going through
The only stuff that goes in comes out of me you

Repeat chorus

Shoalhaven Water
Bridge Road, Nowra NSW 2541

Telephone: 02 4429 3214
Email: water@shoalhaven.nsw.gov.au
Web: www.shoalwater.nsw.gov.au

