Movie Bugs

School Incursion - Stage 1, 2 and 3
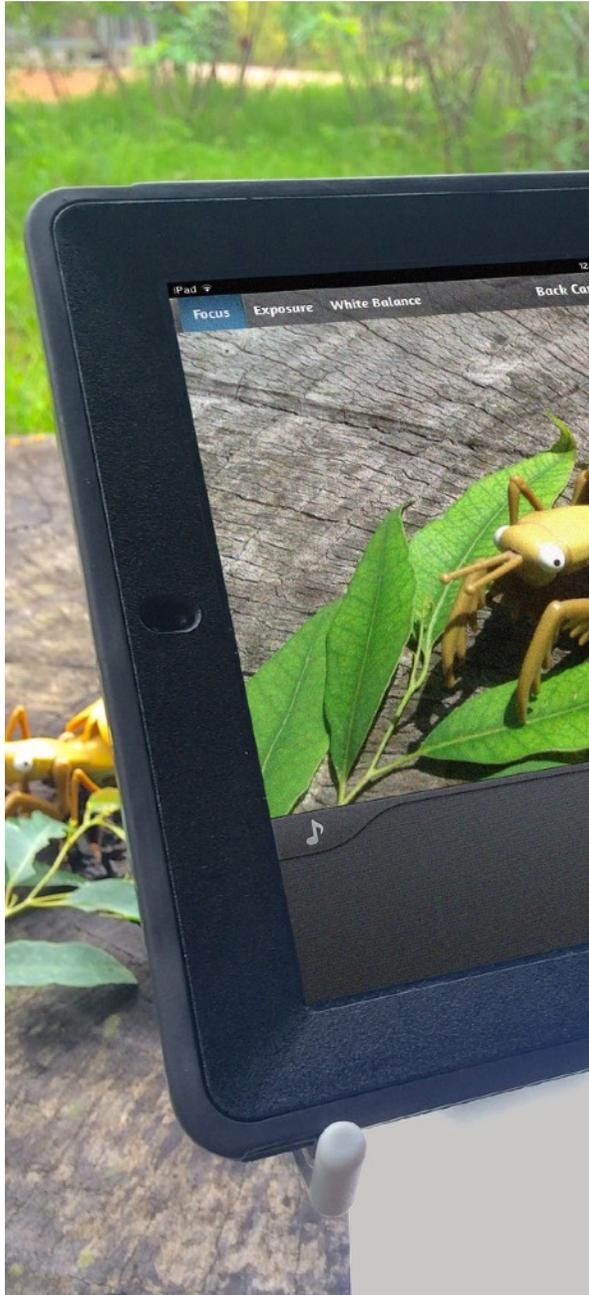
School name:	Sample Public School
School phone:	9999 9999
Organising teacher - first name:	Field of Mars
Organising teacher - last name:	EEC
Email:	fieldofmar-e.school@det.nsw.edu.au
Mobile:	
Incursion:	Movie Bugs
Start time:	9.30am
Finish time:	2pm
1st date (refer to the booking calendar above):	
Approx student numbers:	
Number of classes:	
Grades:	
2nd date (if required):	
Approx student numbers:	
Number of classes:	
Grades:	

NSW GOVERNMENT | Education

Teacher checklist

Location – Your school.

Cost - $20 per student, no GST. If booked numbers change by more than 10 students please contact us as soon as possible before the incursion as this informs staffing and the resources we provide.

Bring - essential items only; medications, food, water, sunblock, hat and wet weather gear.

Preparation - ensure you are familiar with the learning activities necessary to complete before each incursion date. The animation on the second date will be based on the script, storyboard and invertebrate models developed by the students in class.

Clothing - sports uniform recommended. Hats and sturdy closed shoes essential for all participants.

Staffing - classroom teachers will be involved in all activities including rugged bushwalking.

Parent helpers - welcome, no preschoolers. We recommend 3-4 parents per class are invited on the second incursion day to assist groups record their animation. Closed shoes essential.

Please provide - for both incursions please provide one large classroom with IWB

Name tags - reusable and pinned on.

Extreme or wet weather - may result in the excursion being modified, postponed or cancelled. This includes days predicted to be above 35ºC, high winds, extreme bush fire danger and dust storms.
Ph: 98161298, 0418118697, 0438842343

Cancellations - less than two weeks notice $100. This does not apply to cancellations due to weather.

Medical or special needs - please notify Field of Mars EEC staff.

Incursion timetable - to be confirmed at time of booking

9.30 - 11.00	Group 1 (up to 2 classes)
11.00 - 11.30	Recess
11.30 - 1.00	Group 2 (up to 2 classes)
1.00 - 1.30	Lunch
1.30 - 3.00	Group 3 (up to 2 classes)

Teaching and learning overview

Movie Bugs is an amazing literacy focused incursion program that engages students in stop motion animation projects using an iPad.

The Movie Bugs program includes:
- A hands-on investigation of the invertebrates found in your school
- Scripting and storyboard development support
- Creation of a stop-motion animation focused on the features or habitats or life cycle of a local invertebrate.

The Movie Bugs program has three parts:

1. On the first incursion to your school Field of Mars EEC staff will introduce students to the invertebrates found in the playground through a hands-on investigation. Using an iPad connected to your IWB they will explore the features, habitats and life cycles of some of these animals. Students will then be introduced to the next task of planning and creating an animation.

2. In the weeks that follow classroom teachers and students conduct research on their chosen invertebrate. Students will create a script and storyboard for their animation. They will create stop motion props such as drawings or invertebrate models and scout around for the ideal location to place their set.

3. On the second incursion to your school Field of Mars EEC staff will resource and support the teams of students as they use stabilised iPads to record their stop motion animation about their chosen invertebrate.

Syllabus outcomes and content

This program supports both the English K-6 and Science and technology K-6 syllabuses and can be tailored to support either Stage 1, Stage 2 or Stage 3 students.

Syllabus outcomes and content relevant to each stage are provided in detail at the end of this document.

Movie Bugs lesson sequence

1. Movie Bugs on iTunes U

The iTunes U course will always contain the most up to date and comprehensive resources and materials for the Movie Bugs program. Any updates or new resources will be instantly updated on your device. The course suits the flipped classroom model or could be used in-class sessions.

To access iTunes U you will need an iPad, iPod touch or an iPhone and the iTunes U app.

iTunes U enroll link
https://itunesu.itunes.apple.com/audit/COJCM9TX26
Enrol Code - JTA-P8N-MD5

For more information on iTunes U visit
http://www.apple.com/au/education/ipad/itunes-u/

To see the suite of iTunes U courses available for free on the iTunes U store see Field of Mars on iTunes U.

If you do not have an iTunes U compatible device you can use the following information in this pdf.

2. Movie bugs introduction

2.1 Background information – What are invertebrates?

Invertebrates are animals without a backbone such as insects, spiders, ticks, slaters, snails, slugs and worms. Instead of an internal skeleton (endoskeleton) they have an external skeleton (exoskeleton) that encases their internal anatomy.

Exoskeletons are rigid and support invertebrates in many ways: They act as a barrier from desiccation (moisture loss), defence from predators (camouflage, spikes etc), containment for their internal organ systems and mobility. Exoskeletons grow in strength and hardness as they mature.

More than 90% of the world's animals are invertebrates and they can live virtually anywhere. Within the deepest oceans, frozen mountains, driest deserts and wettest rainforests invertebrates can be found.
Invertebrates vary in size from minute animals too small to see such as mites to very large such as a lobster or the goliath stick insect.

View - What are insects? Australian Museum (http://australianmuseum.net.au/what-are-insects)

2.2 Introducing movie bugs

Watch the Introducing Movie Bugs Video. This video will provide teachers with an overview of the learning that will occur while participating in Movie Bugs.

Discuss your expectations for learning with the students.

Watch – Introducing Movie Bugs (http://vimeo.com/88016483)

3. Investigating invertebrates

3.1 What's alive in our playground?

Go outside!
Explore and observe looking for the best places in the school to find invertebrates and other living things.

Choose a planted or bushy area in your school playground. Ask the students to look around at the living and non-living things. Ask the students to verbally list the living things, eg, trees, shrubs, grasses, spiders, birds, ants.

Students then group the living things into plants and animals. Ask the students to point to or stand beside examples of living plants and animals.

Explain that there are many different types of animals and that they are grouped into vertebrates and invertebrates. Explain that vertebrates are animals with

backbones (vertebrae) and that invertebrates are animals without backbones.

Ask the students to identify their observed animals as either vertebrates or invertebrates.

Ask them to provide other examples of invertebrates.

Students verbally list living things in the playground

3.2 Invertebrate collection methods

Before the Field of Mars EEC incursion watch the Collecting Leaf Litter Invertebrates and Conducting a Tree or Leaf Shake videos below. These videos cover the investigation process for collecting invertebrates while the Field of Mars EEC visits your school.

Discuss the investigation process and emphasise safety tips. The most important being that students should never pick up an invertebrate with their hands.

Refer to the previous activity and ask students to list the best locations in the school to find invertebrates during the next session.

Watch – Collecting Leaf Litter Invertebrates (http://vimeo.com/88120418)

Watch – Conducting a Tree Shake (http://vimeo.com/88120711)

3.3 Collecting playground invertebrates – Field of Mars EEC incursion 1

Go outside! Collect and observe.

Teacher preparation: If required re-watch the videos mentioned in the previous chapter.

During this session students will work cooperatively with Field of Mars EEC staff to conduct an investigation, using simple equipment, to explore and answer the questions:

- Where do invertebrates live in our school?
- What are some of the features of invertebrates that live in our school?
- How do these invertebrates grow and change?

Invertebrates collected in this session will be used as the basis for a stop motion animation that will be created during the next Field of Mars EEC incursion visit.

Students will work in small groups of 2 or 3 to search for invertebrates in the gardens and trees found in your school or local area.

Remind students of the main safety rule - do not touch or collect invertebrates with your hands.

Equipment provided by Field of Mars EEC: collection jars or bug jars, paint brushes, tote trays, trowels, old white sheets, iPads.

Equipment supplied by school: Large classroom with IWB

3.4 Identifying invertebrates – Field of Mars EEC incursion 1

After collecting invertebrates teams will return to the classroom with their favourite collected specimens. Specimens will be examined using personal magnifiers and identified using ID charts and other resources.

Features and life cycles of collected specimens will be explored while invertebrates are enlarged, projected and photographed using an iPad and connected IWB. During this time the classroom teacher can record notes about collected invertebrates to assist with information reports at a later stage. Photographed invertebrates will be saved for optional printing and used as props for the students' stop motion animations.

Once identified, the collected invertebrates should to be returned to the habitats they were collected from ASAP.

Equipment supplied by school: Large classroom with IWB

For information on invertebrates you might find please see the Australian museum quick invertebrate guide at (http://australianmuseum.net.au/document/quick-invertebrate-guide)

3.5 Introducing stop motion animation – Field of Mars EEC incursion 1

Field of Mars EEC staff will show examples of invertebrate animations created using an iPad and a variety of different props, media and styles.

These animations will provide guidance to the students in terms of the tasks that need to be completed before the next Field of Mars EEC visit.

View – Phasmid Animation (http://vimeo.com/88018063)

View – Butterfly Life Cycle Animation (http://vimeo.com/88018058)

View – Bush Cockroach Animation (http://vimeo.com/88017933)

4. Animation overview

4.1 Exploring stop motion animation

Re-watch - the Movie Bug Animations (previous chapter).

These animations showcase the elements required to create a successful short stop motion animation.

Brainstorm - What would you need to do to create the Movie Bug Animation? For example, the students needed to pick an invertebrate, research the invertebrate, collaborate, write a script, produce a story board (animation plan), practise, choose or create a stage setting, create props, adhere to a time limit, film.

Watch the How to Create a Movie Bug Animation. This short film shows the steps used to create a stop motion animation, from writing a script (information report style), to creating a storyboard, filming and finally how some of the scenes were filmed.

Watch – The How to Create a Movie Bug Animation (http://vimeo.com/88016904). Please note the app shown may be an older version.

5. Developing an informative text, script and storyboard

5.1 Developing an informative text

An informative text is used as the backbone for the creation of your students' 10 to 20 second animation. Students will only animate one or two sections of their completed informative text.

Development of the informative text could occur as a class or with the students working in small teams of two or three students.

Students conduct research to complete a simple informative text on their chosen invertebrate. The informative text includes details like: Name? What are its features? Where does it live? What does it eat? How does it grow and change (i.e: life cycle)?

On the first incursion day Field of Mars EEC will provide a printed Movie Bugs Invertebrate Guide that can be used by students to support basic research.

Refer to the *Movie Bugs Informative Text* template and *Sample Informative Text* document (supplied at the end of this document).

The exact content of the informative text can be adapted to reflect the age and ability of your students. The informative text might be based on students reporting on just the external features of an invertebrate they can see or it might be based on conducting research on the life cycle of an invertebrate.

Once the students have conducted their research they will use this information to develop the storyboard and script for their animation.

Glossary English K-10
- Informative texts – texts whose primary purpose is to provide information through explanation, description, argument, analysis, ordering and presentation of evidence and procedures. These texts include reports, explanations and descriptions of natural phenomena, recounts of events, instructions and directions, rules and laws, news bulletins and articles, websites and text analyses. They include texts which are valued for their informative content, as a store of knowledge and for their value as part of everyday life.

Complete – Movie Bugs Informative Text (see template at end of this document)

View – Sample Informative Text (see sample at end of this document)

5.2 Developing a script and storyboard

The purpose of the storyboard is to help students to visualise what their animation will look like. This involves creating a storyboard with drawings that provides an outline of the types of events, scenes and actions contained in the animation. The quality of the art in the storyboards is not important.

Refer to the example Movie Bug Script and Storyboard. A3 is the recommended size for printed storyboards.

Students will select one or two sections from their informative text that will form the basis of their script, for example students might choose one of the following from their informative text; the features of an invertebrate, what it eats or its life cycle.

The animation will run for a maximum 20 seconds. It is recommended that students read their script out loud to ensure the spoken part of their animation is only around

10 to 15 seconds long. The students should take turns in reading the different parts of the script.

When the script is completed students will create simple drawings that provide a basic outline of what the scene will look like along with potential actions, e.g. arrows to show movement.

Re-watch the Making of a Movie Bug Animation to reinforce the relationship between the script, storyboard and filmed animation.

Create – Movie Bugs Script and Storyboard (see template following)

View – Example Movie Bug Script and Storyboard (see document following)

5.3 Creating props and a stage

The script and storyboard will help determine what types of props the students need to create their animation.

The main prop for the animation is an invertebrate. This could be made out of clay, plasticine, drawn or even be a photograph. Other props might include titles, credits, text, flowers, rocks, plastic insects, toys, leaves, branches, paper, sticks, pipe cleaners etc. Blu-Tack works well in securing props in the required position.

The props that will be moved should only be around the size of the students palm. Only one or two movable objects should be used in the animation.

Watch the Creating Movie Bugs props video (link below) for ideas and suggestions on prop development.

In groups students brainstorm and list the props they need to create their animation. Students use this list to create a checklist of props they will need.

Depending on the students ability they might only use one main model for the whole animation or they might create multiple models to use at different times to illustrate invertebrate features or life cycle changes.

Students will also need to select an outdoor area that will be used as the stage for their animation. The stage area needs to be close to the ground, outside on the grass or in a garden and should reflect the habitat of the invertebrate. The area for the stage should only be around the size of A3 paper. When students use an iPad it will be set up on a flexible stand placed directly onto the ground.

Watch the Setting up a Movie Bug Stage Video (link below).

Use a box or tote tray to store the props and stage items for filming.

The Movie Bugs animation will be filmed outside. Students should consider using props that are robust (they will be moved around by students) and a stage/background that will not be affected by the wind. If extreme weather occurs students will need to consider how they can recreate their stage indoors.

Equipment supplied by school: Prop materials such as clay, plasticine, photographs, plastic insects, toys, leaves, branches, paper, sticks, pipe cleaners etc

Watch – Creating Movie Bugs Props (http://vimeo.com/88017273)

Create – Students create a Movie Bugs Props checklist

Watch – Setting up a Movie Bugs Stage (https://vimeo.com/164497277)

5.4 Preparing to animate

Re-watch the The How to Create a Movie Bug Animation (http://vimeo.com/88016904). Please note the app shown may be an older version.

Discuss and revisit the steps required to make the stop motion animation.

Watch [Using iStopmotion](). Discuss the important things to remember when using the iStopmotion app.

Additional adults such as parents should be invited to assist during the next animation creation activity.

Watch – The How to Create a Movie Bug Animation (http://vimeo.com/88016904)

Watch – Using iStopmotion (https://vimeo.com/117873409) Please note the app shown may be an older version.

Watch - Using iMovie in Movie Bugs (https://vimeo.com/117874071)

6. Create a stop motion animation

6.1 Creating a stop motion animation – Field of Mars incursion 2

(We recommend 3/4 parents per class are invited on this day to assist groups record their animation.)

The focus of this session is to provide students with an opportunity to engage with and creatively explore stop motion animation.

At the start of the session Field of Mars EEC staff will demonstrate to students how to use the app iStopmotion to create an animation with the assistance of the script, storyboard and props.

A quality animation usually contains 10 pictures per second of film.
For a 20 second animation students will need between 180 to 220 frames of animation.
To speed up the process a minimum of 5 pictures per second could be used.

Out in the school grounds each group begins creating their animation.

Steps

1. Record the script in a quiet spot. The script needs to be recorded in one go, with students taking turns reading the script.
2. Set up the stage.
3. Place the invertebrate models/drawings/props/titles/text into their starting positions.
4. Make sure you know what each prop is going to do in the scene.
5. Set up iPad on its stand. Make sure its stable. Focus the camera. Take a picture or two.
6. Make slight changes to your models so they progress in whatever action they're doing. A movement of around 1cm is great. iStopmotion provides an overlay of the previous image to help guide positioning.
7. Focus the camera. Take a picture. Remember: never move the iPad.
8. Continue moving your models and taking pictures until all movements in the scene are complete. The movements should match the recorded narration. Refer to the sound waves below the timeline in iStopmotion. As a reminder, you'll want a minimum of 5 pictures per second of film.

Create – A Movie Bug animation with iStopmotion

7. Movie Bug Festival

7.1 Animation Premiere – Field of Mars incursion 2

Students will be invited to present their animation on the 'big screen' during this session to showcase their efforts to their class. Animations will be saved and provided to the school for further viewing.

Watch – Student Movie Bug Animations

7.2 Reflection

Conduct a reflective discussion with the class on the completed works and the processes undertaken to achieve the outcomes.

Example questions:

What part of the activity did you enjoy the most and why?
What new skills did you learn?
How could you use these new skills in other areas?
What did you find most challenging during the animation process?
How did you overcome these challenges?
What would you do differently if you did the activity again?

Syllabus outcomes and content

The Movie Bugs lesson sequence supports the following outcomes and content:

Stage 1

Science & technology K-6
ST1-10LW
Living things have a variety of external features.
● describe some external features of a variety of living things, including plants and animals
● use a range of methods, including fieldwork, to identify plants or animals in their local area

ST1-11LW
Living things live in different places where their needs are met.
● observe the different places in a local land or aquatic environment where living things can be found, eg a schoolyard, pond, beach or bush

ST1-5WT
Students generate and develop ideas by:
● researching and exploring different sources of information, including the internet
● exploring different materials by observing and manipulating them and using trial-and-error

English K-6
EN1-3A
Respond to and compose texts
● construct texts featuring print, visual and audio elements using software, including word processing programs (ACELY1664, ACELY1674)

Stage 2

Science & technology K-6

ST2-10LW
Living things can be grouped on the basis of observable features and can be distinguished from non-living things. (ACSSU044)
• Students identify and use patterns in the observable features of living things to group them, by using tables, diagrams or flowcharts

ST2-5WT
Students produce solutions by:
• exploring a range of materials appropriate for the task
• developing and applying a plan and sequence for production that considers, where relevant, time and resources
• safely and correctly using a range of tools and equipment, materials and techniques, eg cutting, combining, joining, shaping, assembling and finishing materials

ST2-15I
There are processes and considerations involved in designing and producing information solutions.
Students:
• demonstrate how a variety of media can be combined to address the needs of a specific audience, eg combining visual images, sound and text in a digital presentation

People interact with information sources and technologies in a variety of ways.
Students:
• explore how people use current and emerging technologies to communicate, access and record information, eg email, mobile phones, blogs and wikis

English K-6

EN2-1A
Respond to and compose texts
• interact effectively in groups or pairs, adopting a range of roles

• use interaction skills, including active listening behaviours and communicate in a clear, coherent manner using a variety of everyday and learned vocabulary and appropriate tone, pace, pitch and volume (ACELY1688, ACELY1792)

EN2-2A
Respond to and compose texts
• plan and organise ideas using headings, graphic organisers, questions and mind maps

EN2-3A
Respond to and compose texts
• use a range of software including word processing programs to construct, edit and publish written text, and select, edit and place visual, print and audio elements (ACELY1685, ACELY1697)

Stage 3

Science & technology K-6

ST3-10LW
Living things have structural features and adaptations that help them to survive in their environment. (ACSSU043)
• Students observe and describe the structural features of some native Australian animals and plants

ST3-5WT
Students generate and develop ideas by:
• selecting and using creative thinking techniques, including mind-mapping, brainstorming, sketching and modelling
• selecting and using research techniques appropriate to the task
• selecting and using techniques for documenting and communicating design ideas to others, eg drawings, plans, flow charts, storyboarding, modelling and presentations, using digital technologies

Students produce solutions by:
• developing a plan and specifications to guide production
• using their plans and production sequence

• for a design project, selecting and safely using a range of tools, equipment and related techniques to cut, edit, join, manipulate and shape materials and/or information

ST3-15I
Social influences can impact on the design of information sources and technologies.
Students:
• explore a range of emerging information technologies and the ways that communicating with others has changed, eg the use of video-conferencing, blogs and wikis

English K-6

EN3-1A
Respond to and compose texts
• plan, rehearse and deliver presentations, selecting and sequencing appropriate content and multimodal elements for defined audiences and purposes, making appropriate choices for modality and emphasis (ACELY1700, ACELY1710)

EN3-2A
Respond to and compose texts
• compose imaginative and informative texts that show evidence of developed ideas
• compose texts that include sustained and effective use of persuasive devices, eg texts dealing with environmental issues
• compose increasingly complex print, visual, multimodal and digital texts, experimenting with language, design, layout and graphics

EN3-3A
Understand and apply knowledge of language forms and features
• recognise the effect of multimedia elements, eg film techniques, animation, voice-overs, sound effects, framing, close-ups

Movie Bugs Informative Text   Name:

Name of Invertebrate (Title)

What are the invertebrates' features? e.g. colour, patterns, wings, number of legs, size

Where does the invertebrate live? - Habitat

What does the invertebrate eat?

How does the invertebrate grow and change? - Life Cycle

Who created this informative text? - Credits

Movie Bugs Informative Text   Name:

Name of Invertebrate (Title)   Bush Cockroaches

What are the invertebrates' features? e.g. colour, patterns, wings, number of legs, size

Bush Cockroaches are insects. This means they have six legs and three body parts. They are brown and black and do not have wings. Some bush cockroaches are the size of your thumb.

Where does the invertebrate live? – Habitat

They live in the mulch or leaf litter and under the bark of trees. Some bush cockroaches like the Giant Burrowing Cockroach make burrows underground.

What does the invertebrate eat?

Bush cockroaches eat bits of rotten leaves and wood. They also like to eat dried grass and twigs.

How does the invertebrate grow and change? - Life Cycle

The Giant Burrowing Cockroach has about 30 young that are born alive. They stay with their mothers for 6 to 9 months living on food provided by their mother. They become adults at about 3 to 4 years old. They live to be about 7 years old.

Who created this informative text? – Credits
Created by Julie Overton using information from the following websites:

http://www.insektus.com/files/GiantBurrowingCockroach.pdf

http://australianmuseum.net.au/Native-Cockroaches/
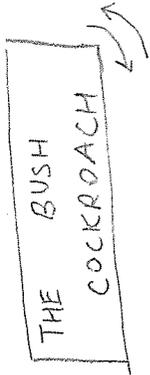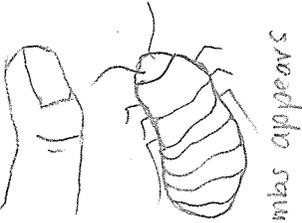
Movie Bugs Script and Storyboard

FIELDOF**MARS**
ENVIRONMENTAL EDUCATION CENTRE
EXPERIENCE   ENGAGE   ENABLE

Name:

Time	Script	Scene / Actions

Total Time =

Movie bugs script and timeline

Name: Liz and Julie

Scene/Actions	Script	Time
THE BUSH COCKROACH 1. Moves and rotates	Bush cockroaches are insects.	2
1. Moves across and around screen	They are brown or black.	5
1. Thumbs appears	and are as big as your thumb	2
1. Cockroach moves around leaves 2. Cockroach eats a leaf.	They live in the leaf litter where they eat bits of rotten leaf.	5

Total Time = 14 seconds