

Science

Grade 9 Academic & Applied SNC1D/SNC1P



**CANADIAN ORGANIZATION FOR TROPICAL
EDUCATION AND RAINFOREST CONSERVATION**

ISBN 0-9811799



Activity – Rainforest Walk of Fame

Ontario Curriculum Expectations

BY1.04 - describe various types of asexual reproduction that occur in plant species or animal species, and various methods for the asexual propagation of plants (e.g., fission, budding, production of spores; fission in the amoeba and planaria flatworm, budding in the hydra and sponge; use of bulbs, cuttings, grafting, and modified stems in plants);

BY1.05 - describe and give examples of types of sexual reproduction that occur in plants and in animals, including hermaphrodites (e.g., conjugation, cross-fertilization, internal and external fertilization);

BY2.05 - communicate scientific ideas, procedures, results, and conclusions using appropriate language and formats (e.g., describe the steps involved in spore and gamete production in mosses and explain the relationship between them);

Classroom Resources Required for Activity/Lesson:

Activity Handout (photocopies for the class), 'Walk of Fame' Evaluation Rubric, Star Template (Enlarge & Photocopy)

Assessment Strategy

Diagnostic Assessment – addressing class questions & concerns about material
Formative Assessment - examining research & rough drafts leading up to the final submitted 'star' for classroom Species Walk of Fame

Evaluation

Summative Evaluation – submitted 'Stars' are evaluated using the activity rubric

Activity/Lesson Plan Sequence

-Begin by introducing the Tropical Rainforest Species Walk of Fame by passing out activity handouts or using the overhead projector

-Each student will be assigned one animal or plant species found in the tropical rainforests of Costa Rica (see partial species list)

-Students will find a photograph or draw an illustration of their species and provide the correct scientific name (and common name). This will be on the front of their 'Star'

-On the back of their 'Star' students will provide a one to two paragraph write-up of their species detailing habitat, range (preferably with a small map) and life-cycle/reproductive strategy

-The last paragraph of their write-up must describe why their species should be inaugurated to the Tropical Species Walk of Fame (e.g. highly venomous, brightly coloured, interesting reproductive strategy)

-After students submit their 'Stars' for evaluation, they could be hung from the classroom ceiling (if fire regulations permit) or attached to the wall with a piece of tape at the top of the star to allow students to 'flip' the star to examine the information on the back

Homework/Class Reminders: begin to research your species, prepare a rough draft of your write-up for assessment



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Tropical Rainforest Partial Species List

Note: *An alternative to providing your students with a list/assigning a particular species would be for them to conduct their own tropical species research.*

Birds

Brown pelican
Keel-billed toucan
Scarlet macaw
Great green macaw
Crimson-fronted parakeet
Blue-crowned motmot
Resplendant quetzal

Reptiles – Snakes

Eyelash viper
Bushmaster
Fer-de-lance
Boa constrictor
Parrot snake
Coral snake
Mussurana
Hog-nosed viper

Reptiles – Sea Turtles

Leatherback
Olive ridley
Loggerhead
Hawksbill
Green

Reptiles – Other

Crocodile
Caiman
Green Iguana
Ctenosaur

Amphibians

Poison dart frog
Red eyed tree frog
Giant toad
Rocket Frog
Emerald Glass Frog
Costa Rican Leopard Frog
Yellow-headed Gecko

Plants

Cecropia tree
Raphia Palm
Bromelids
Guanacaste
Eucalyptus
Papaya

Insects

Blue morpho butterfly
Leaf-cutter ant
Walking stick insect
Rhinoceros/Hercules beetle
Glasswing butterfly
Kissing bug
Ambush bug

Spiders & Scorpions

Black widow
Scorpion
Zebra tarantula
Golden-orb spider
Wandering spider

Mammals

Whiteface monkey
Howler monkey
Spider monkey
Squirrel monkey
Jaguar
White-lipped peccary
Ocelet
Margay
Jaguarundi
Three toed sloth
Kinkajou
Manatee
Tapir
Agouti
Paca
Vampire Bat
Fishing bulldog bat

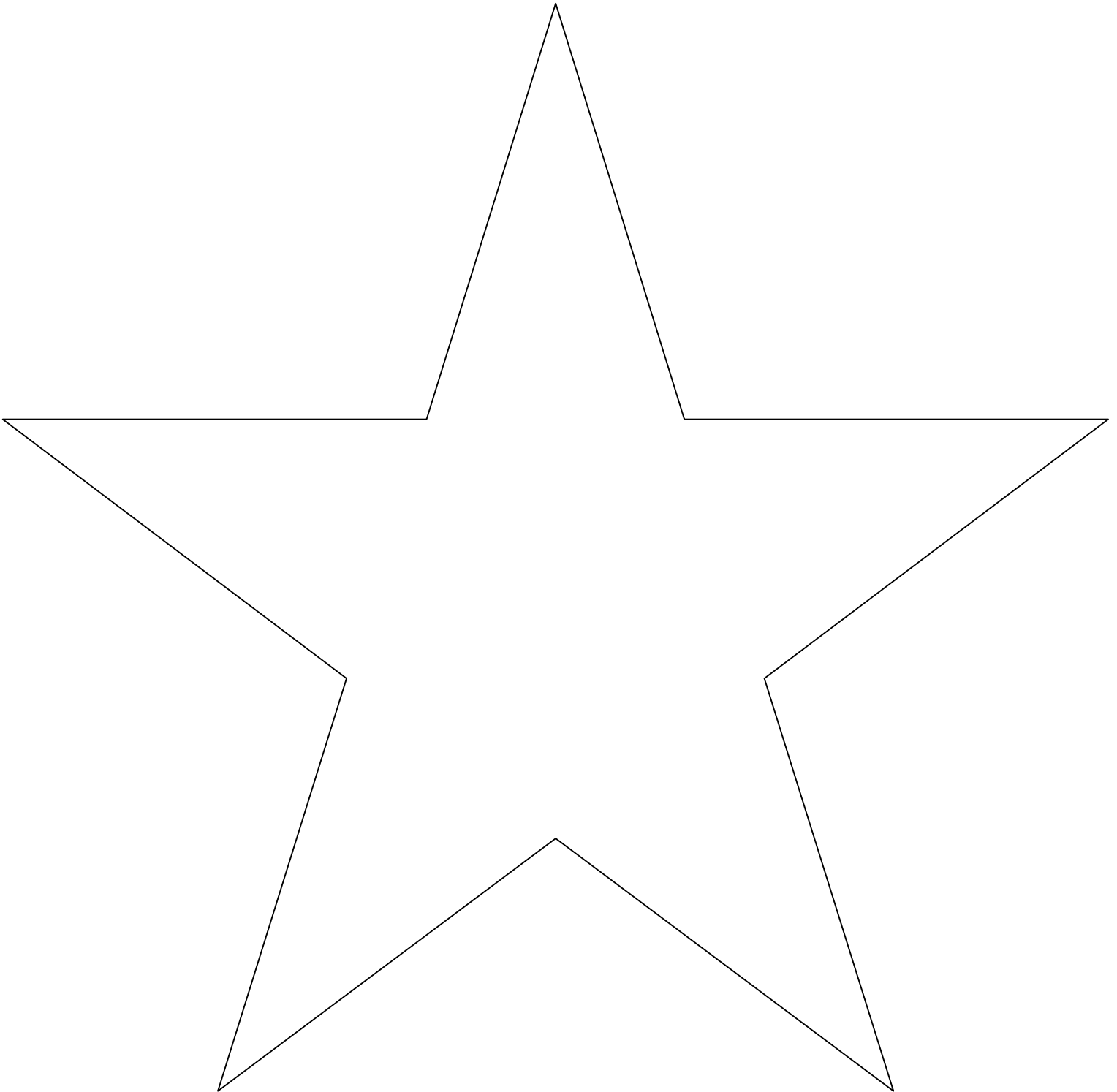


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Star Template



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Tropical Rainforest Walk of Fame

Name: _____

Project Due Date: _____

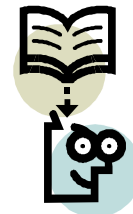
Tropical Rainforest Species: _____

Tropical Rainforest Walk of Fame

For this assignment, you will produce a 'Star' for the classroom Tropical Rainforest Walk of Fame.

Your Star must include the following components:

1. A photograph or illustration of the rainforest species including the scientific name. For true Star power, find the footprints/leaf prints of your species and place them on the front of your Star along with the photo/illustration.
2. A summary or description of the habitat where your species is found.
3. A detailed description of how your species reproduces (i.e. does the animal lay eggs, is fertilization internal/external, how does the plant pollinate, is the species hermaphroditic, etc.). The description must be approximately one to two paragraphs in length and fully describe all relevant aspects of how the organism reproduces in the rainforest. You must also describe in one paragraph why this organism should be included on the classroom Walk of Fame (i.e. what makes your plant/animal unique?) This description will be on the back of your Star.
4. After you have completed your descriptive write up and have found a suitable photo or drawing of your species, use the star template that your teacher has provided for you to make your Star. Glue or tape the photo to the front side of the Star (be sure to include the scientific name under the illustration). Glue or tape your written description on the back of the Star.
5. Try to be as creative as possible. You could use the template to make a construction paper Star or perhaps use different materials.
6. After your teacher has assessed/evaluated your Star, it may be placed in your classroom as part of an entire Walk of Fame for your tropical species.



Good Luck and be creative!



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Rainforest Walk of Fame 'Star' Evaluation Rubric

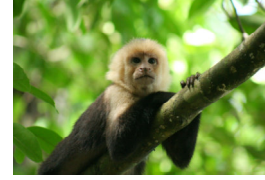
Criteria	Level 4	Level 3	Level 2	Level 1
Knowledge and Understanding	-Student presents very accurate, detailed information regarding the lifecycle, habitat and range the rainforest species	-Detailed & accurate information is presented regarding the lifecycle, habitat and range of both species	-Information presented is somewhat accurate, but is missing important details about the lifecycle, habitat or range of the species	-Student presents limited information about rainforest species and has omitted important details
Application	-The third paragraph highlights many unique attributes of the rainforests organism (i.e. justifies the inauguration to Walk of Fame) -Very creative and insightful approach to material	- The third paragraph highlights a number of unique attributes of the rainforests organism (i.e. justifies the inauguration to Walk of Fame) -Creative approach to material is evident	- The third paragraph highlights some unique attributes of the rainforests organism (i.e. justifies the inauguration to Walk of Fame) -Some creativity is evident	- The third paragraph highlights one unique attribute of the rainforests organism (i.e. justifies the inauguration to Walk of Fame) -Evidence of creativity is limited
Communication	-illustration/photo of the organism with the correct scientific name is present on the front of the 'Star' -no grammar or spelling mistakes are present	-illustration/photo of the organism is present with the correct scientific name -few grammar or spelling mistakes are present	-illustration/photo of the organism is present, mistakes in scientific name or format -some grammar or spelling mistakes are present	-illustration/photo of the organism is present, no scientific name provided -many grammar or spelling mistakes are present



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Activity – Rainforest Reproduction Poster Project

Ontario Curriculum Expectations

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BY1.05 - describe and give examples of types of sexual reproduction that occur in plants and in animals, including hermaphrodites (e.g., conjugation, cross-fertilization, internal and external fertilization);

BY2.05 - communicate scientific ideas, procedures, results, and conclusions using appropriate language and formats (e.g., describe the steps involved in spore and gamete production in mosses and explain the relationship between them);

Classroom Resources Required for Activity/Lesson:

Activity Handout (photocopies for the class),
Poster Evaluation Rubric

Assessment Strategy

Diagnostic Assessment – addressing class questions & concerns about material
Formative Assessment - examining research materials & poster rough sketches leading up to the final submitted poster

Evaluation

Summative Evaluation – submitted posters are evaluated using the poster rubric
Summative Evaluation – mini-presentations are evaluated using the presentation rubric

Activity/Lesson Plan Sequence

-Begin by introducing the poster project in class, pass out handout and assign

animal and plant species (i.e. verbally assign or students could draw the species 'out of a hat'), ensure that students receive species with different reproductive strategies (e.g. a sea turtle vs. a palm tree, also see list provided)

-Each student will have two tropical rainforest species to compare and contrast their reproductive strategies as well as highlighting the habitat and range of the species (alternatively, students could work in groups of two or three)

-Have students read the handout and address any questions regarding the poster or the mini-presentations that will follow (note - an alternative to presentations could be a classroom walkabout, where the posters are displayed and students are able to walk around the classroom to view each one)

-A period in the library/computer lab or class-time to work on the project could be an extension to this activity

-Set up formative assessment check points to ensure that students are addressing the expectations for the poster prior to submission (i.e. have students prepare a rough sketch of their posters or have a short conversation with each student during a homework check to verbally assess project progress)

Homework/Class Reminders: Complete a rough sketch of the poster, begin research



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Tropical Rainforest Partial Species List

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Brown pelican
Keel-billed toucan
Scarlet macaw
Great green macaw
Crimson-fronted parakeet
Blue-crowned motmot
Resplendant quetzal

Reptiles – Snakes

Eyelash viper
Bushmaster
Fer-de-lance
Boa constrictor
Parrot snake
Coral snake
Mussurana
Hog-nosed viper

Reptiles – Sea Turtles

Leatherback
Olive ridley
Loggerhead
Hawksbill
Green

Reptiles – Other

Crocodile
Caiman
Green Iguana
Ctenosaur

Amphibians

Poison dart frog
Red eyed tree frog
Giant toad
Rocket Frog
Emerald Glass Frog

Costa Rican Leopard Frog
Yellow-headed Gecko

Plants

Cecropia tree
Raphia Palm
Bromelids
Guanacaste
Eucalyptus
Papaya

Insects

Blue morpho butterfly
Leaf-cutter ant
Walking stick insect
Rhinoceros/Hercules beetle
Glasswing butterfly
Kissing bug
Ambush bug

Spiders & Scorpions

Black widow
Scorpion
Zebra tarantula
Golden-orb spider
Wandering spider

Mammals

Whiteface monkey
Howler monkey
Spider monkey
Squirrel monkey
Jaguar
White-lipped peccary
Ocelet
Margay
Jaguarundi
Three toed sloth
Kinkajou
Manatee
Tapir
Agouti
Paca
Vampire Bat
Fishing bulldog bat



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Rainforest Poster & Mini-Presentation Project

Name: _____

Project Due Date: _____

Mini-Presentation Date: _____

Tropical Rainforest Species: _____

Tropical Rainforest Species Poster

You will work on a poster that describes how your organisms (either a plant or animal species) live and reproduce in the tropical rainforest.

Your poster must include the following pieces of information:

7. A photograph or illustration of both rainforest species including the scientific name of each species.
8. A summary or description of the habitat where your species are found.
9. A map that displays the countries where your plant or animal is found.
10. A detailed description of how each species reproduces (i.e. does the animal lay eggs, is fertilization internal/external, how does the plant pollinate, is the species hermaphroditic, etc.). The description must be approximately one to two paragraphs in length and fully describe all relevant aspects of how the organism reproduces in the rainforest.
11. Compare the similarities and differences of the reproductive strategies of the two organisms. This could be done as a table on your poster (e.g. does your species lay eggs or disperse seeds?).

Tropical Rainforest Species Mini-Presentation

After completing your poster, you will present your information to your classmates. The mini-presentations will be approximately two to three minutes.

Your mini-presentation must address the following points:

1. A brief description of your rainforest species (e.g. the scientific name, habitat, species range, etc.)
2. A description of the life cycle of your species (i.e. how your organism reproduces).
3. What is similar and what is different about how your tropical species reproduce.

Be sure to investigate different resources for rainforest information such as your school library, the internet and various books. Good Luck!



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Presentation Evaluation Rubric

Criteria	Level 4	Level 3	Level 2	Level 1
Knowledge and Understanding	<p>-Very accurate and detailed information is presented to audience</p> <p>-At least two relevant visual aids are used and explained during the presentation</p> <p>-Visuals effectively aid the audience's understanding of the presented topic</p>	<p>-Accurate and detailed information is presented to the audience</p> <p>-At least two visual aids are used and explained during the presentation</p> <p>-Visuals aid the understanding of the presented topic</p>	<p>-Somewhat accurate and detailed information is presented</p> <p>-At least one visual aid is used and explained during the presentation</p> <p>-Visuals somewhat aid the understanding of the presented topic</p>	<p>-Significant information or detail is lacking in materials presented to audience</p> <p>-One visual aid is presented to audience</p> <p>-Visuals do not aid explanation of presentation topics</p>
Communication	<p>-Clear, confident speaking voice</p> <p>-No use of written notes/cue cards (i.e. excellent audience eye contact)</p> <p>-Very effectively engages the interest of the audience</p> <p>-Very logical approach to material presented</p>	<p>-Clear, confident speaking voice</p> <p>-Little use of written notes/cue cards</p> <p>-Effectively engages the interest of the audience</p> <p>-Logical approach to material presented</p>	<p>-Voice is somewhat clear, student lacks confidence</p> <p>-Some use of written notes/cue cards</p> <p>-Audience is somewhat engaged in presentation</p> <p>-Presentation is somewhat lacking in logical progression</p>	<p>-Voice is not clear, student lacks confidence</p> <p>-Extensive use of written notes/cue cards</p> <p>-Audience is not engaged</p> <p>-No logical presentation progression</p>



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