**Pre-Activities Grade 2: The Bee Movie**

In the weeks leading up to the movie…

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| **Grade** | **Curriculum Expectations** | **Activities** |
| 2 | **Science: Unit: Understanding Life Systems: *Growth and Changes in Animals***  **2.5** investigate the ways in which a variety of animals adapt to their environment and/or to changes in their environment, using various methods  **3.3** identify ways in which animals are helpful to, and ways in which they meet the needs of, living things, including humans, to explain why humans should protect animals and the places where they live  **3.2** describe an adaptation as a characteristic body part, shape, or behaviour that helps a plant or animal survive in its environment  **Language Unit: *Writing***  **1.4** sort ideas and information for their writing in a variety of ways, with support and direction  **1.5** identify and order main ideas and supporting details, using graphic organizers (e.g., a story grammar: characters, setting, problem, solution; a sequential chart: first, then, next, finally) and organizational patterns  **1.6** determine whether the ideas and information they have gathered are suitable for the purpose, and gather new material if necessary  **Health**  **C1.4** outline the basic stages of human development (e.g., infant, child, adolescent, adult, older adult) and related bodily changes, and identify factors that are important for healthy growth and living throughout life | **Activity 1: Is it Alive? (**adapted from: Zoo Central: An Integrated Unit for Grade 1/2)  \*This activity will give teachers good pre-assessment information on students’ prior knowledge of living and non-living things.  **Discussion**  \*Show the class a few pictures of living and non-living things. Ask the students to discuss how the objects in the pictures are similar and different.  \*List some of the students' responses in separate columns without writing the subtitles living and non-living things.  \*Read the lists and ask the class if they know the terms used to describe these two categories. If the students are unable to give the terms living and non-living, tell the class.  \*Add the subtitles “living and non-living” above the columns previously given during the class discussion. Ask students if they know other criteria that can be used to describe living or non-living objects. If the students do not suggest that living things have needs, the teacher will provide the explanation. (e.g., the need for food, water, air).  \*Choose a picture from the **“Living and Non-Living Pictures.”** Ask the students to help you determine which heading the picture belongs under.  \*Show the class another picture and state "This is a living thing" or "This is a non-living thing." The students must state whether they agree or disagree with the statement given and give a reason to support their choice, such as the living thing needs food. The teacher then mounts the picture under the correct heading.  The students will use the handout (**Living and Non-Living Things**) provided to draw two pictures of living and non-living things under the appropriate headings.  The students must draw different pictures than the pictures used in the previous class activity.  **Activity 2: Comparing our Stages of Development to the life cycle of a Honey Bee** (adapted from: Zoo Central: An Integrated Unit for Grade 1/2)  **Humans**  \*ask students to brainstorm in their health books what stages of development humans go through, how do they start, what do they become  \*talk about their ideas as a class  \*on the smartboard or as a printed copy on the board review the **Human Growth Display Posters** and see if they were missing any stages or thought of a stage that was not in the posters  \*get them to draw and label their own corrected version of the stages of development or use the **Stages of Development** handout to get them to correctly label each stage and draw their picture in each box  **Bees**  \*Brainstorm then as a class or in small groups what students know about bees—it could be what they do, what they look like, why they are useful, where they have seen them sitting, write down their ideas and talk about them as a class  \*if any of the students have made the observation that some bees produce or help make honey as them if they know how and ask if they think all bees do this or are there different kinds of bees  \*confirm that there are different kinds of bees, not all of them are honey bees but those are the ones we are going to specifically talk about  \*split them into small groups, pairs or have a whole class brainstorm about the body parts students know bees have and why they would be useful to them  \*write down ideas/talk about them as a class  \*after they have thought of some ideas show them the **“Characteristics of Bees”** handout on a smartboard or projector, read out the labels and try asking what certain parts of the bee are and see if students can label some of them (obvious ones like wings and antenna they may get) and others may need to be answered as a class  \*After they have labelled some explain how some of the parts of the bee function and how they use the flower to make honey, use these as a guideline, some words may be too detailed for younger students:  1. Explain that worker bees have a long tube (called a proboscis) that they use to gather their food (called nectar), the sweet fluid produced by flowers. Worker bees store it in a part of their body called the honey sac.  2. Tell students that in addition to nectar, bees collect pollen. Pollen is the yellow-green powder-like substance that comes from flowers. Bees returning to the hive often carry balls of pollen which stick to the stiff hairs on their legs (a bee body part called pollen baskets). Honey bees mix pollen with nectar to form beebread, a protein used to feed larvae (immature bees).  3. Explain to students that after they collect nectar, honey bees store their food: The house bees mix the nectar with enzymes and deposit it into the honeycomb. Then they evaporate moisture from the nectar enzyme mixture by fanning the honeycomb cells with their wings. You now have honey! The bees then cap the honey cells with beeswax  4. Explain to students that bees and flowers have a relationship where both animal and plant benefit. In nature, this is called a symbiotic relationship. Ask students: Bees get nectar from flowers, but the flower gets something in return. Do you know what the flower gets? Explain that flowers trade sweet nectar and protein-rich pollen in return for pollination and reproduction of the plant species. Bees track pollen from flower to flower, which allows flowers to reproduce and grow**.**  **\***Next do the **Life Cycles—Honey Bee** handout  Finally:  \*compare the life cycles of a honey bee to the stages of development of a human through Venn diagram, students can do this individually or as a group and then look at answers together  **Pre-Movie Discussion**  \*discuss with students that they will be going to see a movie which deals with the topics they have been investigating in science—in the movie “Bee Movie” the life of a honey bee, Barry, is followed and we see how honey bees live and why they are important to the whole environment.  \*Develop a list of different ideas from students when you discuss the following questions, alternatively you could also make a **KWL (know, wonder, learn) chart** to discuss the following and any other ideas they might have—leaving the last column (Learn) blank to fill in for after the movie:  **1)** What does a honey bee do?  **2)** From what we have discussed, do you remember how a Honey Bee makes the honey? What other parts of the environment are necessary for the bee to make its honey? (Flowers, pollen, nectar)  **3)** Why do you think honey bees would be important to the environment? Important to us?  A few KWL questions:  **4)** If all the honey bees were gone do you think it would matter? Why? What might or might not happen?  **5)** What do you wonder about the movie? (What will happen, who the bee is, why bees are important, what do honey bees do?) |