** LESSON PLAN**

**Candidate’s name:** Terri Wilkinson

| Grade/Class/Subject: | grade 5 science | School: | Suwilaawks  |
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| Date: | Nov 13 2024 | Allotted Time: | 40 min |
| Topic/Title: | Digestion in Action - Experiment (lesson 3) |

1. **LESSON ORIENTATION**

**Key resources:** [Instructional Design Map](https://www.dropbox.com/s/g7l0nd7jah1o927/InstructionalDesignMap.pdf?dl=0)

| *Briefly, describe purpose of lesson, and anything else to note about the context of lesson, students, or class, e.g. emergent learning needs being met at this time, elements of focus or emphasis, special occasions or school events.* |
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| The purpose of this lesson is to give students a tangible understanding of how the digestive system physically and chemically processes food. With the interactive experiment students will deepen their understanding of the digestive system process.  |

1. **CORE COMPETENCIES**

**Key resources:** <https://curriculum.gov.bc.ca/competencies>

| **Core /Sub-Core Competencies** *(check all that apply):* | *Describe briefly how you intend to embed Core Competencies in your lesson, or the role that they have in your lesson.* |
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| ☐x COMMUNICATION – Communicating☐ COMMUNICATION – Collaborating ☐x THINKING – Creative Thinking☐ THINKING – Critical Thinking☐x THINKING – Reflective Thinking☐x PERSONAL AND SOCIAL – Personal Awareness and Responsibility☐ x PERSONAL AND SOCIAL – Positive Personal and Cultural Identity ☐ PERSONAL AND SOCIAL – Social Awareness and Responsibility | Communication - during the experiment the students will work in small groups, they will share ideas, listen actively, and explain their ideas.Thinking - as the students watch the food breakdown for physical and chemical digestion they will be engaging in critical thinking and will interpret the different changes. With this being a hands-on experiment the students will be encouraged to visualize what will happen to the food during different stages.Personal and Social - Students work collaboratively, and practice respect, cooperation and responsibility in the groups. Students can relate to their own experiences of eating food. |

1. **INDIGENOUS WORLDVIEWS AND PERSPECTIVES**

**Key resources:** First Peoples Principles of Learning (FPPL); [Aboriginal Worldviews and Perspectives in the Classroom](https://www2.gov.bc.ca/assets/gov/education/administration/kindergarten-to-grade-12/indigenous-education/awp_moving_forward.pdf)

| **FPPL to be included in this lesson** *(check all that apply):* | *How will you embed Indigenous worldviews, perspectives, or FPPL in the lesson?* |
| --- | --- |
| *X* Learning ultimately supports the well-being of the self, the family, the community, the land, the spirits, and the ancestors. ☐X Learning is holistic, reflexive, reflective, experiential, and relational (focused on connectedness, on reciprocal relationships, and a sense of place). ☐ Learning involves recognizing the consequences of one's actions.☐X Learning involves generational roles and responsibilities.☐ Learning recognizes the role of Indigenous knowledge.☐X Learning is embedded in memory, history, and story.☐ Learning involves patience and time. ☐X Learning requires exploration of one's identity.☐ Learning involves recognizing that some knowledge is sacred and only shared with permission and/or in certain situations. | Students have a hands-on experiential learning opportunity that will allow them to engage physically. The activity promotes reflection when students observe and discuss, which will help them make connections to real life.The students will have to work together and show respect for teacher contributions. They will also be responsible for cleaning up. the materials and communication.The experiment helps students to draw connections between their personal experiences eating food and how the digestive system works. |

1. **BIG IDEAS**

**Key resources:** <https://curriculum.gov.bc.ca/> (choose course under Curriculum, match lesson to one or more Big Ideas)

| *What are students expected to understand? How is this lesson connected to Big Idea/s or an essential question?* |
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| [Multicellular organisms have organ systems that enable them to survive and interact within their environment](https://curriculum.gov.bc.ca/curriculum/science/5/core). |

1. **LEARNING STANDARDS/INTENTIONS**

**Key resources:** <https://curriculum.gov.bc.ca/> (choose course under Curriculum)

| **Curricular Competencies:***What are students expected to do?*  | **Content:***What are students expected to learn?* |
| --- | --- |
| Make observations in familiar or unfamiliar contextsMake predictions about the findings of their inquiryObserve, measure, and record data, using appropriate tools, including digital technologiesCommunicate ideas, explanations, and processes in a variety of ways | basic structures and functions of body systems:* [digestive](https://curriculum.gov.bc.ca/curriculum/science/5/core#;)
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1. **ASSESSMENT PLAN**

**Key resources:** [Instructional Design Map](https://www.dropbox.com/s/g7l0nd7jah1o927/InstructionalDesignMap.pdf?dl=0) and<https://curriculum.gov.bc.ca/classroom-assessment>

| *How will students demonstrate their learning or achieve the learning intentions? How will they know if they are proficient? How will the evidence be collected, documented and shared? Will you use* ***observation****s, have targeted* ***conversations****, or collect* ***products****? Mention any opportunities for feedback, self-assessment, peer assessment and teacher assessment. What tools, structures, or rubrics will you use to assess student learning (e.g. Performance Standard Quick Scale)? Will the assessments be* ***formative****,* ***summative****, or both?* |
| --- |
| Formative assessmentObservations during experiment* observing students engagement, cooperation, and understanding during the steps, following instructions, handing the materials responsively
* look for understanding of what the materials and the steps represent in the digestive process

Questioning and Discussion* ask students questions during and after the experiment to check for understanding “what do you think is happening to the food at this stage?” “why do we add liquid, and what does it represent?” “how does this process help our bodies get energy from food?”

Wrap up* students will hand in their mechanical and chemical worksheet
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1. **DESIGN CONSIDERATIONS**

**Key resources:** [Instructional Design Map](https://www.dropbox.com/s/g7l0nd7jah1o927/InstructionalDesignMap.pdf?dl=0)

| *Make brief notes to indicate how the lesson will meet needs of your students for: differentiation, especially for known exceptionalities, learning differences or barriers, and language abilities; inclusion of diverse needs, interests, cultural safety and relevance; higher order thinking; motivations and specific adaptations or modifications for identified students or behavioural challenges. Mention any other design notes of importance, e.g. cross-curricular connections, organization or management strategies you plan to use, extensions for students that need or want a challenge.* |
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| Creating the small groups* will group students thoughtfully to support abilities, social dynamics, and mixed strengths

Choice of activity* will provide option for students to write a short paragraph of the experiment instead of drawing and labeling the experiment diagram

Step-by-step instructions* will walk students through the experiment step-by-step, providing visual and written instructions on the board
* will model the experiment, showing students exactly what each step looks like
* will have pre crushed food for students that find the steps to much or have students observe and discuss rather than participate

EA support* will have 1 EA and 1 youth support in the room at the time of the lesson, will give them specific instructions on which students to help and what their role will look like

Behavioral challenges* will give”JC” student clear, structured roles within the group (recorder, materials manager) to help the student understand their roll
* will have a quiet area where student can step away if needed
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| **Required preparation:** *Mention briefly the resources, material, or technology you need to have ready, or special tasks to do before the lesson starts, e.g. rearrange desks, book a room or equipment.* |
| * crackers
* ziplock bags
* water
* paper towels
* spoon or dropper
* cups
* the digestive system hand out (chemical vs mechanical)
* visual aids (examples)
* TPT
 |

1. **LESSON OUTLINE**

| **Instructional Steps** | **Student Does/Teacher Does** *(learning activities to target learning intentions)* | **Pacing** |
| --- | --- | --- |
| **OPENING:***e.g. greeting students, sharing intentions, look back at what was learned, look ahead to what will be learning, use of a hook, motivator, or other introduction to engage students and activate thinking and prior knowledge* | **Teacher - get class attention**“Good morning class, Today we are going to look into more of the journey of food through our digestive system. We’ve already learned/talked about, digestion is the process that helps our bodies break down food to get the nutrients we need for energy, growth, and health. But did you know that there are two types of digestion working together to make this happen?ask students“does anyone know what these two types of digestion could be?”wait for answers and discussion“the two types of digestion are mechanical and chemical digestion, and today we are going to do an experiment to understand what they mean” | 5 min |
| **BODY:*** *Best order of activities to maximize learning -- each task moves students towards learning intentions*
* *Students are interacting with new ideas, actively constructing knowledge and understanding, and given opportunities to practice, apply, or share learning, ask questions and get feedback*
* *Teacher uses learning resources and strategic opportunities for guided practice, direct instruction, and/or modeling*
* *Can include: transitions, sample questions, student choices, assessment notes (formative or otherwise), and other applications of design considerations*
 | **Set up of experiment**Teacher“let's start with mechanical digestion”Ask students then, give definition and examples - mechanical digestion is when we use physical force to break down food - like when we chew food into smaller pieces with our teeth, to make it easier to swallow or when the muscles in the stomach break down the food into even smaller pieces for absorption.“next is chemical digestion”ask students then, give definition and examples - chemical digestion uses special substances called enzymes, and digestive juices to chemically break down food to even smaller particles that our body can absorb. An example of chemical digestion is in the mouth with saliva and in the stomach with stomach acids.“For our experiment today we are going to see how these two types of digestion work together. We’ll get to “digest” food and watch how it changes in each stage”provide each group with* zip lock bag (to represent stomach)
* crackers (as the food)
* little bit of water (to represent stomach acid)

explain each materials role in the experiment* each student will get the worksheet

**Conduct the experiment - take students through each step together*** step 1 - place food into the zip lock bag
* step 2 - crush up the cracker (mechanical)
* step 3 - add the stomach acid (chemical)
* step 4 - have students fill in the mechanical and chemical digestive system worksheet

ask question along the way* “What does the food look like during each step?”
* “What do you think will happen to the food once we start digesting it in the bag?”
* “what are you doing to the food during each step (mechanical or chemical)?”
* “Can you describe what is happening to the food?”
* “Would this step be mechanical or chemical?”
* “What examples of mechanical or chemical digestion did we observe in the experiment?”
* “can you explain why breaking down food in multiple ways helps our bodies use it better?”

clean up and get ready to wrap up | 10 min20 min |
| **CLOSING:*** *Closure tasks or plans to gather, solidify, deepen or reflect on the learning*
* *review or summary if applicable*
* *anticipate what’s next in learning*
* *“housekeeping” items (e.g. due dates, next day requirements*
 | **Reflection and Discussion Wrap Up*** recap on the role of mechanical and chemical digestion
* have time for any questions or shares
* conclude with students putting their work sheets into the science folder
* let students know we will continue next class with more of the digestive system
 | 5 min |

1. **REFLECTION**

| * *Did any reflection in learning occur, e.g. that shifted the lesson in progress?*
* *What went well in the lesson (reflection on learning)?*
* *What would you revise if you taught the lesson again?*
* *How do the lesson and learners inform you about necessary next steps?*
* *Comment on any ways you modeled and acted within the Professional Standards of BC Educators and BCTF Code of Ethics?*
* *If this lesson is being observed, do you have a specific observation focus in mind?*
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| --- |
| I think the lesson went well. The students were actively involved in the process of each step, making observations and participating in the discussion and questions. If I were to teach this again I would make a few changes. First I would make sure to pre-explain the expectation of what it looks like to work in the groups, instead of trying to tell them as things came up.I would also use the phrase “when I say go”. I think that would have prevented students from getting out of their seats and the jobs in the groups to be more evenly distributed. Next I would have pre planned where each group would sit, after handing out the supplies it got a little loud and chaotic because the students didn’t know where to sit because groups were now not in table groups. Lastly I would have a list of supplies written on the whiteboard, I found myself repeating what they needed more than a few times.  |

**Prior lessons**

**Lesson 1 - introduction to the digestive system**

**Objective**

Students will understand the purpose of the digestive system and its main organs

**Introduction - Pass the paper Activity**

In the center of large pieces of paper, write “digestive system” then groups of students have a few minutes to write/ draw what they know about the digestive system.

Encourage group discussion and participation

Does anyone want to share what they put on their paper?

**Teach**

Watch the video “How does the digestive system work?”

After video have question/answer period

1. What is the main job of the digestive system?
	1. The main job of the digestive system is to break down food into nutrients, so the body can absorb and use them for energy, growth and repair
2. Can you name the parts of the digestive system?
	1. Mouth, esophagus, stomach, small intestine, large intestine, liver, pancreas
3. How does food move through the digestive system?
	1. By a process called peristalsis, which is a series of muscle contractions that push food along the digestive tract
4. What is the role of the stomach?
	1. Mix food with digestive juice, like acid and enzymes, that help break down the food into smaller, more digestible pieces.
5. Where does the absorption of the nutrients mainly take place?
	1. Mainly in the small intestine, nutrients pass through the walls of the intestine and into the bloodstream
6. What happens to the parts of the food that aren’t digested?
	1. They move into the large intestine , where the water is absorbed and the remaining waste is excreted from the body as poop.

**Activity**

Students will label the diagram of the digestive system, when finite can color each area a different colour

**Wrap up**

Recap key points

Main job of the digestive system (breaking down food for energy)

The 6 main parts in order of digestive system (in order)

Next we will be exploring more about the digestive system and the journey of food through the digestive system

Put the diagram in your science folder we will need it again

**lesson 2 - the path of food**

**Materials**

Visualization script

Handouts - draw picture, write a story or make a comic

Extract labeling cut out sheet if time

**Objective**

Students will follow the journey of food through the digestive system

**Introduction (10 min)**

Read the Visualization script to class, have them sitting and quiet in their chairs

When done reading script write a few key points on the whiteboard

* Mouth - chewed and mixed with saliva
* Esophagus - food moves through the long tube by muscles contracting and relaxing along the way
* Stomach - the food mixes with acids, and make them smaller pieces
* Small intestine - more chemicals and liquidated added and absorbed into the walls, then into the bloodstream to help muscles be strong
* Large intestine - anything left over gets absorbed and then turned into poop/feces

**Activity - create the journey of the food (25-30 min)**

After the review let students know they can choose to draw, write or create a comic about the journey of their food they visualized.

Go over expectation of what should be be in their own foods journey

* Mouth, esophagus, stomach,small intestine, large intestine
* Pictures, descriptive words, labeling
* Clean sequence of the digestive system
* Be creative

**Wrap up (5 min)**

Invite students to share what they created

Ask “did anything surprise you about the journey of your food?”

If extra time handout the extra labeling/cutting sheet

**Lesson 4 - Small and Large intestines**

**Lesson 5 - Introduction of poster research project**