



A Walk on the Tundra

A Walk on the Tundra

JUNIOR BOOK STUDY



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- In this lesson, students will work to achieve the following objectives:
 - o Participate in a series of activities examining plants from the book.
 - o Learn about the major parts of plants and their functions.
 - o Explore what plants need to grow and survive.
 - o Examine how plants are suited to their individual habitats.
 - o Learn about plant adaptations and why they are necessary in all climates.
 - o Participate in a transect study of local plants found on the tundra.

Mark Breakdown51

General Accommodations and Modifications

Outlined below are some useful learning strategies that may assist those students who struggle with their learning, or demonstrate some difficulty with everyday classroom tasks. Students, teacher and parents must work together to maximize the student's learning potential and to create a positive, productive and successful classroom community.

Environmental Accommodations

- Arrange seating to reduce distractions.
- Provide the student with an area to keep supplies and books away from their work area.
- Allow breaks between tasks.

Adaptations to Lesson Presentation

- **Note:** Remember that we learn in different ways and we cannot expect that all students will respond in the same way to a specific teaching strategy. (Some different learning style including, auditory, visual, kinesthetic, and tactile.)
- Give a structured overview before the lesson.
- Provide verbal and written instruction.
- Establish routines that enable the student to check understanding with a peer.
- Provide frequent repetition of important tasks.

Adaptations to Assignments, Projects, and Tests

- Shorten assignments and/or divide assignments into parts.
- Provide extended time for completion of assignments.
- Provide additional time for reading assignments.
- Provide assistance with note-taking if needed.
- Use peer support and mentoring (select a classroom buddy).
- Enable students to demonstrate understanding of material using a variety of media, including oral presentations, visual arts/illustrations, audio or video-taped assignments, bulletin board displays, dramatizations, and demonstrations.
- Provide assistance with organization and planning of class work and-or homework.
- Credit for class participation, effort, and attendance.

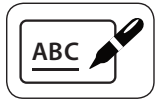
Unit Description

This unit is geared towards Grades 3, 4, and 5 primary students. It consists of a series of four lessons focused on *A Walk on the Tundra* by Rebecca Hainnu and Anna Ziegler. This learning unit seeks to bring the natural environment into the learning experience, while allowing students to explore Inuit culture and learn the value of community elders. As they participate in reading, writing, oral communication, comprehension, and reflection activities, students will become more knowledgeable about the following topics of study: Plants, the Environment, and Elders. Students will learn all about plants, including parts, functions, habitats, and adaptations. To finish the unit, students will participate in a transect study of local plants. When the book study is complete, the class will have created a class book of local plants, along with a range of independent and group work that can be used for assessment.

Icon Descriptions



READING Learners will read assigned passages using a variety of reading strategies.



VOCABULARY Through organized activities, learners will review vocabulary from the assigned passages. They will learn the definitions of these words and practice integrating them into written and oral communication.



ORAL COMMUNICATION Learners will discuss the readings and express what they have learned through oral language in open class discussions, small group work, and presentations.



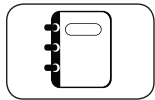
LISTENING Learners will be asked to demonstrate effective listening strategies as they attend to verbal instructions, discussions, and presentations.



WRITING Learners will read assigned passages using a variety of reading strategies.



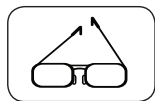
COMPREHENSION ACTIVITIES Learners will demonstrate their understanding of the assigned readings, themes, and topics through various discussion activities, group tasks, assignments, and presentations.



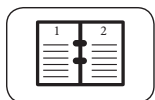
REFLECTION Learners will reflect on the information learned throughout the lesson. In their reflections they will form connections from the readings to the self, the community, and the world.



VISUAL DEPICTIONS Learners will express themselves visually by creating pictures, diagrams, and graphic organizers, demonstrating an understanding of text content and features.



RESEARCH SKILLS Learners will perform a variety of research tasks developed in a sequential progression, encouraging them to build on and improve their research skills.



HANDOUT Handouts accompany many activities throughout the guide. These handouts are to be photocopied and handed out to the learners, allowing them to practice and expand on the information they are learning.



ADAPTATION Adapted handouts accompany many activities throughout this guide. They are included to differentiate instruction and meet the needs of all the students in the class.

Reading for Meaning

OBJECTIVE

In this lesson, students will work to achieve the following objectives:

- Explore prior knowledge, discussing the topics of study: Plants, the Environment, and Elders.
- Predict what is going to happen in the story based on text features such as title, illustrations.
- Read *A Walk on the Tundra* using the read-aloud technique before summarizing the reading in small groups.
- Explore new vocabulary presented in the book.
- Write independent journal responses.

READING

A Walk on the Tundra by Rebecca Hainnu and Anna Ziegler

ESTIMATED TIME

1.5 hours

HANDOUTS

- Handout 1: Predicting
- Handout 2: Important Vocabulary
- Handout 3: Journal Response

MATERIALS

- Chart paper
- Computers and the Internet
- Dictionaries

LEARNING ACTIVITIES

Knowledge and Understanding

1. Topics of Study: Plants, the Environment, and Elders



- Explain to students that in the upcoming learning unit they will read *A Walk on the Tundra* by Rebecca Hainnu and Anna Ziegler and explore a series of topics of study. As they participate in class activities, they will learn about these topics, eventually becoming experts in these areas. The topics of study are:
 - Plants
 - The Environment
 - Elders
- Set up three pieces of chart paper. Label each page with one of the above topics of study.
- Beginning with plants, ask students to explain what they know about this topic of study. Create point-form notes of students' answers on the chart paper. Follow the same procedure with the remaining topics of study.
- **Note:** Environment is a HUGE Word. Before asking students to explain what they know, define the term for them, and discuss it with the class.
- After this discussion, ask students to identify three new things they would like to learn about each topic of study. Record these points on the chart paper.
- Display the chart paper around the room to remind students of the topics of study.

Encourage them to add new information to these pages as the unit progresses and they learn more information.

Thinking

1. Pre-Reading Predictions



- Gather students on the floor.
- Introduce *A Walk on the Tundra* by Rebecca Hainnu and Anna Ziegler to the class. Explain to students that before reading the text, they will attempt to predict what is going to happen in the story based on the text features.
- Direct students' attention to the cover of the book. Discuss the authors and illustrator as a class. If anyone in the class has read the book before, ask them to explain what they liked about it.
- View the illustrations on the front cover. Ask students to explain the images they see and predict what the story is about. Use the following suggested questions to engage students in predictive thinking, recording point-form notes on the board or on chart paper:
 - Who is on the front cover?
 - What is their relationship to one another?
 - What are they doing?
 - Where are they?
 - When is this taking place?
 - Why is this happening? How do you know?
- Read the blurb on the back cover of the book. Again, ask students to predict what is going to happen in the story. Use the following suggested questions to engage students in predictive thinking:
 - Who are the characters in the story?
 - What are the characters like in the story?
 - Where does the story take place?
 - What do the characters learn?
- Tell students to flip through the pages of the book and view the illustrations. Ask them to share any reactions or comments they may have, using the following suggested questions:
 - Who is in the pictures?
 - What are they doing?
 - What is the setting?
 - What happens to the characters?
 - What do the characters learn?
- Record point-form notes on the board or on chart paper.
- Distribute **Handout 1: Predicting**.
- Similar to the whole class activity, students must write predictions in point form on the handout based on the following elements, referring to specific examples from the text:
 - Title
 - Front cover
 - Back cover
 - Illustrations
 - Their prior knowledge
 - Class discussions
- Send students back to their desks and ask them to complete the handouts.
- Ask students to share their predictions before concluding the discussion.

Communicating

1. Reading *A Walk on the Tundra*



- Reading:
 - Read *A Walk on the Tundra*, using the read-aloud technique. Read the book aloud as students follow along, showing the pictures on each page and encouraging comments from the class.
 - When the reading is complete, question students' understanding of the book.
- Post-Reading:
 - Tell the students that good readers make predictions and then revise them based on information from the story.
 - Ask students to read their pre-reading predictions and answer the following questions in their journal:
 - Which of my predictions were right?
 - What information from the book tells me that I am correct?
 - What were the main ideas?
 - What connections can I make to the text?
 - Have a class discussion about making predictions and why this is a good practice when reading in general.

2. Important Vocabulary



- Ask students to review the book and identify important words from the story (e.g., tundra, grandmother, plants, etc.) Record a list of important words on the board or on chart paper.

- Distribute **Handout 2: Important Vocabulary**.
- On the handout, students must choose three important words from the list generated by the class. In their own words, they must write the definition of each word, then write an explanation describing why each word is important in the story.
- Tell students to return to their desks and complete their handouts.
- When handouts are complete, ask students to turn to a partner and discuss their answers.
- Bring the class back together and hold a whole-class discussion around students' answers.

1. Journal Response



- Distribute **Handout 3: Journal Response**.
- Students will write a short reflection beginning with the statement: "Reading *A Walk on the Tundra* taught me ..." They will then draw a picture of what they have learned.
- When reflections are complete, encourage students to share their thoughts with the class.

Name: _____

Predicting

Generate predictions based on two of the following elements, writing point-form notes in the appropriate boxes. Using clues from both predictions, generate a main prediction in the last box.

Elements	Predictions
Title	
Front Cover	
Back Cover	
Illustrations	
Main Prediction	

Name: _____

Predicting

Generate predictions based on three of the following elements. In each of the three boxes, draw a picture of what you think will happen in the story.

Elements	Predictions
Title	
Front Cover	
Back Cover	
Illustrations	
Main Prediction	

Name: _____

Important Vocabulary

Choose three important words from the story. Find the word in the dictionary and record it in your own words. Write an explanation describing how it relates to the story.

1. Word: _____

In your own words: _____

Explanation: _____

2. Word: _____

In your own words: _____

Explanation: _____

3. Word: _____

In your own words: _____

Explanation: _____

Name: _____

Important Vocabulary

Choose three important words from the story. Record the dictionary definition of each word.

1. Word: _____

Dictionary Definition: _____

2. Word: _____

Dictionary Definition: _____

3. Word: _____

Dictionary Definition: _____

Name: _____

Journal Response

A Walk on the Tundra taught me ...

Lesson 2: Character, Setting, and Plot

OBJECTIVE

In this lesson, students will work to achieve the following objectives:

- Review their reading from the previous lesson.
- Participate in a stations activity to learn about parts of a story—character, setting, and plot.
- Develop their oral communication skills as they take part in a jigsaw activity to review what was learned in the stations activity.
- Learn about the tundra.
- Write independent journal responses.
- Enhance their knowledge of the topics of study: Plants, the Environment, and Elders.

READING

A Walk on the Tundra by Rebecca Hainnu and Anna Ziegler

ESTIMATED TIME

1 hour

HANDOUTS

- Handout 1: Inuujaq
- Handout 2: Grandmother
- Handout 3: Setting
- Handout 4: Plot
- Handout 5: About the Tundra
- Handout 6: The Tundra Fact Sheet
- Handout 7: Elders

LEARNING ACTIVITIES

Knowledge and Understanding

1. Reading Review



- Assemble students on the floor.
- Hold *A Walk on the Tundra* in front of the class and ask students to retell what happened in the story. Make point-form notes on the board.
- When this retelling is complete, answer any outstanding questions the students may have.

Thinking

1. Parts of a Story: Stations



- Explain to students that they are going to explore character, setting, and plot in *A Walk on the Tundra*.
- Discuss character, setting, and plot as a class using the following suggested questions and speaking points:
 - o **Character:** Who are the main characters in the story (Inuujaq and Silaaq, her grandmother)? Whose perspective is the story told from (Inuujaq)? What do you know about Inuujaq and her grandmother and how did you come to these conclusions? What is the relationship like between Inuujaq and her grandmother? Explain to students that we know about Inuujaq and her grandmother through their actions and feelings, what they say, their appearances, and how they treat each other.
 - o **Setting:** Where does the story take place? Where does Inuujaq live? What does

- Inuujaq’s community look like? What is the environment like? What do you learn about the setting as Inuujaq and her grandmother go on their walk? Explain to students that the setting is where the story unfolds, including place (e.g., city, country, town, house, mountain, etc.) time (e.g., morning, afternoon, evening; the future, the present, etc.) and the environment (i.e., details that describe the weather, the noise level, the temperature, etc.)
- o **Plot:** What happens at the beginning of the story? What happens in the middle of the story? What happens at the end of the story? What events take place in the story? Explain to students that plot is composed of the events that make up a story.
 - Divide the class into three groups.
 - Create three stations around the room, ensuring that there are enough handouts at each station for all of the students in the class. Groups will rotate through the following stations in ten- to fifteen-minute increments:
 - o Station 1, Character. Students must work together to complete **Handout 1: Inuujaq** and **Handout 2: Grandmother**. Groups must look back through the story and find examples of each character’s actions, feelings, words, and appearance, and how others treat them. These will provide the reader with clues about the characters’ personal characteristics, along with their likes and dislikes. Students must record these examples in point form on the handouts.
 - o Station 2, Setting. Students must work together to complete **Handout 3: Setting**. To complete the handout, students will search the book for examples of time, place, and environment that help to describe the setting of the story. They will record these examples from the story in point form.
 - o Station 3, Plot. Students will work together to complete **Handout 4: Plot**. On the handout, they will write about one event that takes place at the beginning, one that takes place in the middle, and one that takes place at the end of the story.
 - When the time is up, ask students to gather all of their materials and remain in their groups, awaiting instructions for the next activity.

Communication

1. Stations Jigsaw



- In their groups from the previous activity, ask students to number themselves off as one, two, and three.
- Ask all number ones to join together to form a new group in another part of the room, and then ask the number twos and threes to do the same. Students must bring the work they completed in the stations activity to their new group. The final result will be three new groups with members who had different experiences during the stations activity.
- In their new groups, students must share what they learned during the stations activity. Students should be encouraged to add any new information to their handouts.
- Once they have finished their discussions, bring the class back together and discuss what they have learned, using the following suggested questions:
 - o What did you learn about the characters in the book? What did you learn about elders?
 - o What did you learn about the setting of the story? What did you learn about the environment?

LESSON 2: CHARACTER, SETTING, AND PLOT

- o What did you learn about the plot of the story? List some events that took place at the beginning, middle, and end of the story.
- o Did you learn anything new about any of the topics of study: Plants, the Environment, and Elders?
- Before concluding this discussion, answer any outstanding questions.

Application

1. The Tundra



- Ask students to explain what they have learned about the tundra from reading *A Walk on the Tundra*. Write point-form notes on the board.
- Distribute **Handout 5: About the Tundra** and **Handout 6: Tundra Fact Sheet**.
- Read Handout 5 using the read-aloud technique. Read the text aloud as students follow along.
- When the reading is complete, ask students to complete Handout 6 with a partner. Explain that all the answers for the fact sheet can be found in the passage.
- When students have finished their work, review the handouts as a class.
- Before concluding this discussion, answer any outstanding questions the students may have.

2. Journal Response



- Distribute **Handout 6: Elders**.
- Explain to students that in Inuit culture, elders are the keepers of tradition and

knowledge. Elders are role models in each community and are highly regarded, valued, and respected.

- Keeping this view of elders in mind, students must describe the relationship between Inuujaq and her grandmother by answering the questions on the handout.
- When students have completed their work, discuss the handouts as a class.
- Ask students to take out their journals and reflect on the following topic:
 - o Think about the relationship between Inuujaq and her grandmother. Write a reflection explaining an important relationship you have with an elder in your life.
- When reflections are complete, encourage students to share their thoughts with the class.

Inuujaq

How She Acts

How She Feels

What She Says

INUUJAQ

How She Looks

How Others Treat Her



Name: _____

Grandmother

How She Feels

How She Acts

What She Says

GRANDMOTHER

How She Looks

How Others
Treat Her



Name: _____

Setting

Record point-form notes about the setting of the story.

Place (City, country, town, house, mountain, etc.)	Time (Morning, afternoon, or evening; in the future, present, or past, etc.)	Environment (Weather, noise level, temperature, etc.)

Name: _____

Plot

Explain one event that takes place at the beginning, one that takes place in the middle, and one that takes place at the end of the story. These events help make up the plot of the story.

Beginning
Middle
End

Name: _____

Plot

Draw a picture in each box that explains one event that takes place at the beginning, one that takes place in the middle, and one that takes place at the end of the story. These events help make up the plot of the story. Write one sentence to describe each picture.

Beginning
Middle
End

About the Tundra

The tundra is the coldest ecosystem. The tundra is found in the regions just below the ice caps of the Arctic, extending across North America to Europe and Asia. About half of Canada is tundra.

There are two main seasons in the tundra, winter and summer. Although it is cold, the tundra receives low amounts of precipitation, making it similar to a desert.

Tundra winters are long, dark, and cold, with temperatures below 0°C for six to ten months of the year. The average temperature at this time is around -28°C, sometimes dropping as low as -50°C. During the long winter months, the sun barely rises and it is dark for most of the day.

The temperatures in the tundra are so cold that below the surface, the ground is permanently frozen. This is called permafrost. During the summer months, the sun shines almost 24 hours a day and temperatures rise to an average of 12°C. This rise in temperature allows the top layer of permafrost to melt. The permafrost melts only a few inches, leaving the ground soggy and allowing roots and vegetation to grow, creating marshes, lakes, bogs, and streams.

In the tundra, the vegetation has adapted to the cold and short summer growing season. Here you will find dwarf shrubs, sedges, grasses, mosses, lichens, and a few scattered trees. The trees that do manage to grow stay close to the ground, so they are insulated by snow during the cold winters.

KEY TUNDRA FACTS

- Temperature: -40°C to 18°C
- Precipitation: 150 to 250 mm of rain per year
- Vegetation: Almost no trees due to short growing season and permafrost; lichens, mosses, grasses, sedges, shrubs
- Location: Regions south of the ice caps of the Arctic and across North America, Europe, and Siberia (high mountain tops)



Name: _____

Tundra Fact Sheet

1. Tundra is the _____ ecosystem.
2. Where can you find the tundra? _____

3. How much of Canada is covered by the tundra ecosystem? _____

4. What seasons happen on the tundra? _____
5. How long is the winter? _____
6. What is the average temperature in the winter? _____
7. How much sun does the tundra get in the winter? _____

8. What is permafrost? _____

9. How long does the sun shine during the summer? _____

10. What is the average temperature in the summer? _____
11. What happens to permafrost in the summer? _____

12. What kind of vegetation grows on the tundra? _____

Name: _____

Tundra Fact Sheet

1. Tundra is the _____ ecosystem.

2. Where can you find the tundra? _____

3. How much of Canada is covered by the tundra ecosystem? _____

4. What seasons happen on the tundra? _____

5. How long is the winter? _____

6. What is the average temperature in the winter? _____

7. How much sun does the tundra get in the winter? _____

Name: _____

Elders

Begin to think about the relationships in *A Walk on the Tundra* by answering the following questions.

1. Describe the relationship between Inuujaq and her grandmother.

2. How are the characters in *A Walk on the Tundra* alike and different from one another?

3. How do the characters feel about each other?

4. Why do the characters need each other?

5. What do the characters learn from each other?

Name: _____

Elders

Begin to think about the relationships in *A Walk on the Tundra* by answering three of the following questions.

1. Describe the relationship between Inuujaq and her grandmother.

2. How are the characters in *A Walk on the Tundra* alike and different from one another?

3. How do the characters feel about each other?

4. Why do the characters need each other?

5. What do the characters learn from each other?

Name: _____

6. Why is Inuuq's relationship with her grandmother important?



Plants and the Environment

OBJECTIVE

In this lesson, students will work to achieve the following objectives:

- Review what has been learned thus far in the unit.
- In small groups, explore the plant glossary at the back of the book and teach their classmates about one of the plants in an oral presentation.
- Discuss littering and create anti-littering posters to be displayed around the school.
- Research plants found in their own community, create a write-up on one plant in pairs, and combine their work to create a class plant book titled “Plants in Our Community.”
- Reflect on what they have learned throughout the unit in an independent journal response.

READING

A Walk on the Tundra by Rebecca Hainnu and Anna Ziegler

ESTIMATED TIME

1 hour

HANDOUTS

- Handout 1: Plant Research

MATERIALS

- Chart paper
- Computers and the Internet
- Blank paper
- Drawing utensils
- Books and Internet print-outs of plants

LEARNING ACTIVITIES

Knowledge and Understanding

1. Review Questions



- Review what has been learned thus far in the unit through an active class discussion. The following list provides suggested questions to help guide the discussion:
 - What have you learned about plants thus far in the unit? List some plants you have learned about that interest you. What would you still like to learn about plants?
 - What have you learned about the environment thus far in the unit? Is there anything about the environment that interests you? What have you learned about the tundra? Have you learned any new information about the environment?
 - What have you learned about elders thus far in the unit? What do you like most about the relationship between Inuujaq and her grandmother?
 - What have you learned about character, plot, and setting?
 - Have any of the topics in this unit piqued your interest and inspired you to do any further independent research?
- Explain to students that they are going to continue exploring these topics of study in today’s lesson.
- Before concluding this discussion, allow students to ask any outstanding questions they may have.

Thinking

1. Plant Glossary



- As a class, generate a list of plants from the story (view the glossary for assistance). Record a list of plants on the board or on chart paper.
 - Divide the class into six groups and assign each group one of the plants in the glossary (e.i., Qijuktaat, Qunnguliit, Paunnait, Uqaujait, A'aasaaq, and Ujgunnaq).
 - Provide each group with chart paper. Ask students to write the name of their plant on the top of the paper and, leaving room for a picture, ask them to write the following subheadings:
 - "How does it look?"
 - "How is it used?"
 - "What happens in the book?"
- Note: Educators may wish to prepare the chart paper for the students.*
- Encourage groups to fill in their chart paper in point form and work together to draw a picture of their plant.
 - When students have finished their work, ask each group to present their plant to the class.
 - Following the presentations, discuss what students learned about plants and the environment in this activity.

Communication

1. Littering



- Look back to the first page of *A Walk on the Tundra*. Ask students to explain what Inuujaq does with her pop can.

- Define littering as a class, writing the definition on the board or on chart paper.
- Ask students to think back to Inuujaq's actions at the end of the book. What is her reaction to the pop can she threw on the ground earlier in the story? Ask students to explain why she had this change of heart.
- Ask students to explain their opinion of littering. How do they feel about it and what impact does it have on their community and the environment?
- Tell students to think about their school and their community. What message would they like to spread about littering? Write suggestions on the board or on chart paper. *Note: You may wish to organize a campaign to clean up the schoolyard at this time.*
- Explain to students that they will create posters about littering to be put up around the school.
- Distribute blank paper and drawing utensils and allow students to begin their work.
- Completed posters will be displayed around the school.

Application

1. Plants in Our Community



- Collect a variety of books and Internet print-outs of plants from your community to assist students with this activity.
- Ask students if they can list any plants that are found in their community (e.g., dandelions, ferns, poison ivy, etc.) Create a list on the board.
- Go down the list of plants and ask students to describe each plant, where they can be found, and what they need in order to grow.

LESSON 3: PLANTS AND THE ENVIRONMENT

- Divide the class into pairs and encourage students to do additional research on plants in their community.
Note: Hand out books and Internet print-outs at this time to assist students with their research.
 - Distribute **Handout 1: Plants in Our Community**.
 - In their pairs, students must select one plant and complete the handout.
Note: Educators may wish to ensure that there are no duplicates. You may also choose to allow students to create a rough copy before they create a good copy.
 - When pairs complete their good copy, combine all handouts into a book titled “Plants in our Community.”
 - Pass the book around the room, allowing students to view the completed book and learn about plants in their community.
- Ask students to take out their journals.
 - Students must write a reflection beginning with the sentence: “In this unit, I learned ...”
 - When students have completed their work, discuss the reflections as a class.

2. Unit Reflection



- Ask students to explain what they have learned throughout this unit.
- Discuss *A Walk on the Tundra*, encouraging students to reflect on what they learned in the book. Discuss what they liked about the story.
- Revisit the topics of study—Plants, the Environment, and Elders. Ask students to explain what they learned about each topic of study.
- In Lesson 1, the class identified three new things they wanted to learn about each topic of study. Ask these questions of the class and if they have discovered the answers. If not, guide the students as they do some additional research to find the answers.

Name: _____

Plants in Our Community

Plant name: _____

Picture



What does it look like?

Where does it grow?

What does it need to grow?

How is it used?

Interesting facts:

-
-

All about Plants

OBJECTIVE

In this lesson, students will work to achieve the following objectives:

- Learn about the major parts of the plant and their functions.
- Explore what plants need to grow and survive.
- Examine different plant habitats.
- Learn about plant adaptations and why they are necessary in certain climates.
- Participate in a transect study of local plants.
- Use plants from the local environment to make plant pressings.

READING

A Walk on the Tundra by Rebecca Hainnu and Anna Ziegler

ESTIMATED TIME

3 hours

HANDOUTS

- Handout 1: Parts of a Plant
- Handout 2: Plant Parts and Their Functions
- Handout 3: Needs vs. Wants
- Handout 4: Something Is Missing
- Handout 5: Plant Habitats
- Handout 6: Plant Adaptations
- Handout 7: Transect Field Study

MATERIALS

- Chart paper
- Computers and the Internet
- Blank paper
- Drawing utensils
- Books and Internet print-outs of plants
- Rope/string (transect study)

LEARNING ACTIVITIES

Knowledge and Understanding

1. Parts of a Plant



- Explain to the students that throughout their study of *A Walk on the Tundra*, they have learned the value of plants and their different uses. Ask the learners to name some of these uses and record their answers on the board or on chart paper.
- Explain to the students that, just like humans, plants are alive.
- Tell the students that they are going to continue learning about plants. In this lesson, they will learn the different parts of the plant, what plants need to survive and grow, and why different plants are suited to particular habitats.
- **Instructor Note:** If possible, select a variety of plants to show the students (approximately five). Display them throughout the classroom and allow the students to walk around and view them. If you do not have live plants, print out photos of a variety of plants from the Internet and display them around the room.
- Tell the students to examine each plant and write down what they have in common.
- When the students have had time to look at the different plants, bring them together as a group and ask the students what similarities they found among the plants. Record their answers on the board or on chart paper.

- Distribute **Handout 1: Parts of a Plant**. Go through the handout as a class, together naming the different parts of a plant (stem, root, leaf, seed etc.)

Parts of a Plant: Part II



- Explain to the students that each part of the plant has a function, in much the same way that parts of our body provide different functions. For example, our arms help us to lift things, our legs allow us to walk, our eyes to see, our mouths to eat, and so on.
- Distribute **Handout 2: Plant Parts and their Functions**.
- Say to the students, "On the handout, you will find unlabelled descriptions of the various parts of the plant and their functions. Each of the descriptions matches one part of the plant that you labelled in the previous activity. Use the information provided to determine which part of the plant corresponds to the descriptions provided. You may use any available resources to make the correct choices."
- Go through the handouts as a class, and ask the students why it is important to understand the function of each part of the plant. Ask the students how each part of the plant helps the plant to grow and survive.
- Ask the students if they know the difference between a need and a want. Explain that a "need" is something that a person must have to physically stay alive. A "want" is something that might be nice to have or that we think we need, but we could still physically live without.
- Divide the classroom into pairs and distribute **Handout 3: Needs vs. Wants**.
- Tell the pairs to divide the cards into two piles, one pile with things humans need to live and one pile with things humans might want. Each partner should agree to which pile the card belongs.
- Make two columns on the board, one titled "Need" and the other "Want." When each group is finished, discuss what they identified as a need and a want. Make sure that the students identify shelter, food, water, and air as needs.
- Create another column on the board titled "Plant Needs." Ask the students to think about what plants need to grow. Prompt students and offer clues if they do not identify the key elements (air, water, nutrients, and sunlight).
- Ask the students to identify the similarities and differences between human and plant needs. Ask the students what would happen to plants if they didn't receive one of these needs. Record students' answers on the board or on chart paper.

Thinking

1. What Plants Need to Live



- As a class, generate a list of plants from the story (view the glossary for assistance). Record a list of plants on the board or on chart paper.

Part II: Research

What Plants Need to Live



- Review the four needs that plants need to grow; air, water, nutrients, and sunlight.
- Ask the students what they think will happen if a plant does not receive one of these basic needs.
- Distribute **Handout 4: Something Is Missing**.
- Explain to the students that they will now see what happens when a plant does not receive air, water, sunlight, or nutrients.
- Place five small local plants (all the same) around the classroom so that each plant is deprived of one of the key elements. Make sure to label the plants accordingly so there is no confusion regarding what need is being eliminated.
 - Place one plant in a dark area, such as a cabinet (no sunlight).
 - Do not water one plant (no water).
 - Place one plant in a sealed, clear plastic bag (no air).
 - Remove the soil from one plant's pot (no nutrients).
 - Have one plant receive all the necessary elements.
- Tell the students to use their handouts to record their predictions.
- Throughout the week, observe the plants and their growth. Tell the students to record their observations on the handout. Don't forget to water all of the plants, except the one that is being deprived of water.
- At the end of the week, ask the students to look at their observations and discuss the best and worst growing conditions for the plant. Remember to emphasize that a plant

will grow best when all four elements are present.

Extension Activity: Gardening

- Once the students understand the basic elements that plants need to grow, discuss the ideal location in which to create a small garden.
- Because of the climate, it may be best to create your garden in the classroom and during a time when the plant has access to sunlight through a window.
- Have the students decide what plants they would like to grow in their garden and research the best growing conditions for each plant. Using this information, have the students map out the best way to plant the garden.

Communication

1. Plant Habitats



- Say to the students, "Plants can be found in many different habitats throughout the world. Plants are found in the mountains, on the tundra, and even in the water. However, to be successful in their habitat, plants need to be able to grow, reproduce, and complete their life cycle. In each habitat, there are wide ranges of environmental factors that can affect the plants living there."
- Ask the students to recall what plants need to grow and survive. Record their answers on the board or on chart paper. Students should remember that plants need water, air, sunlight, and mineral salts from the soil.
- Say to the students, "While all plants require these elements to grow, like

humans, not all plants are the same. Different plants grow all over the world and in many different environmental conditions, from the Arctic, to the desert, to the rainforest. To survive, plants develop different adaptations or physical features that help them to grow and live successfully in their particular habitat.”

- Divide the students into four groups and distribute **Handout 5: Plant Habitats**. Label each group with one of the following titles: Tropical Rainforest, Arctic Tundra, Desert, and Prairie Grasslands.
- On the handout, students will write the environmental conditions associated with each location, and the corresponding problems that plants living in these climates might face.
- **Instructor Note:** If possible, provide the students with books about plants to assist them in their research. If needed, allow the students to use the Internet. The following is a good Internet link to get them started: <http://www.mbgnet.net/bioplants/adapt.html>.
- When each group has finished filling in the handout, bring the class together.
- Invite each group to present their findings. After each group presents, ask the class to brainstorm a list of physical features or adaptations that the plants living in these different climates might have developed to survive and grow.
- Write the students’ predictions on the board to be used in the next lesson.

2. Plant Adaptations



- Ask the students to assemble in their groups from the previous activity.
- Distribute **Handout 6: Plant Adaptations**.
- Explain to students that within their groups they will be researching three plants found in their given climates/locations.
- Again, provide the students with available research materials if possible, or allow them to gather available research materials on their own.
- Explain to students that they are going to use the available resources to research their plants and provide details about their physical characteristics that allow them to grow and survive in various climates.
- When the groups are finished, again, have each group present their findings to the class. **Note:** Before each group presents, ask them to recount the class’s predictions that are written on the board from the previous activity.
- After they are finished presenting, ask the class whether any of their predictions were right.
 - Did anything from the presentation surprise you?
 - What did you learn from the presentation? What was the most interesting thing that you learned?
- Allow the class to ask the presenting group any questions before moving on.
- Before concluding the activity, invite the students to ask any last questions or make any last statements.

Application**1. Transect Study**

- **Instructor Notes:** A transect is a straight-line profile that creates a cross-section of an area to study plants. The objective of this activity is for students to choose an outdoor location in which to set up a transect and observe/classify the plants found on it. Make sure to choose a site that has a large enough area for eight to ten twenty-five foot transects. For this activity, learners will need:
 - o 24' string between every four learners
 - o two stakes for every four learners (sticks, rulers, or pencils)
 - o a 12' ruler for each learner
 - o green, red, or yellow flagging tape.
- Tell the students that they will be completing their study of plants by going out into the community and examining local plants in their natural habitat.
- Divide the students into two groups.
- Distribute **Handout 7: Transect Field Study**.
- Tell the students that they will be performing a transect study.
- Ask the students:
 - o "If someone asked you to study all of the plants and vegetation found over a very large area, an area that would be too hard to cover by foot, how would you do it?" Ask for volunteers to share their answers and record them on the board or on chart paper.
- Say to the students, "Biologists and other scientists who study plants use a method called transects. This means that they

create a cross-section of an outdoor area [draw what a cross-section looks like on the board or on chart paper] to get samples of an area's vegetative cover."

- Demonstrate for the students how to set up a transect by stretching their string into a long line along the ground and staking it at either end. "The string is then divided into four equal sections, marking the string with flagging tape. The plants touching the string are identified and recorded. The non-living components that fall directly under the string are also identified. With your group, you will be following the instructions on the handout, examining both the living and non-living components of your transects."
- Take the students to the site and have them follow the directions on the handout.
- Help any students who are having difficulty. When each group has completed the handout, ask them to leave their transects in place and return to the classroom.
- When the students are back in the classroom, have each team use their illustrations to identify each plant species. Students can use the Internet and available resource books. When they are finished, ask them to make a list of the different plants they found in their transects.
- Ask the students the following questions:
 - o Did everyone find the same things, or were transects different? Why?
 - o Did any of the results surprise you?
 - o What was the most interesting thing you observed?
 - o Why do you think transects may be important tools for scientists to use when studying tundra?

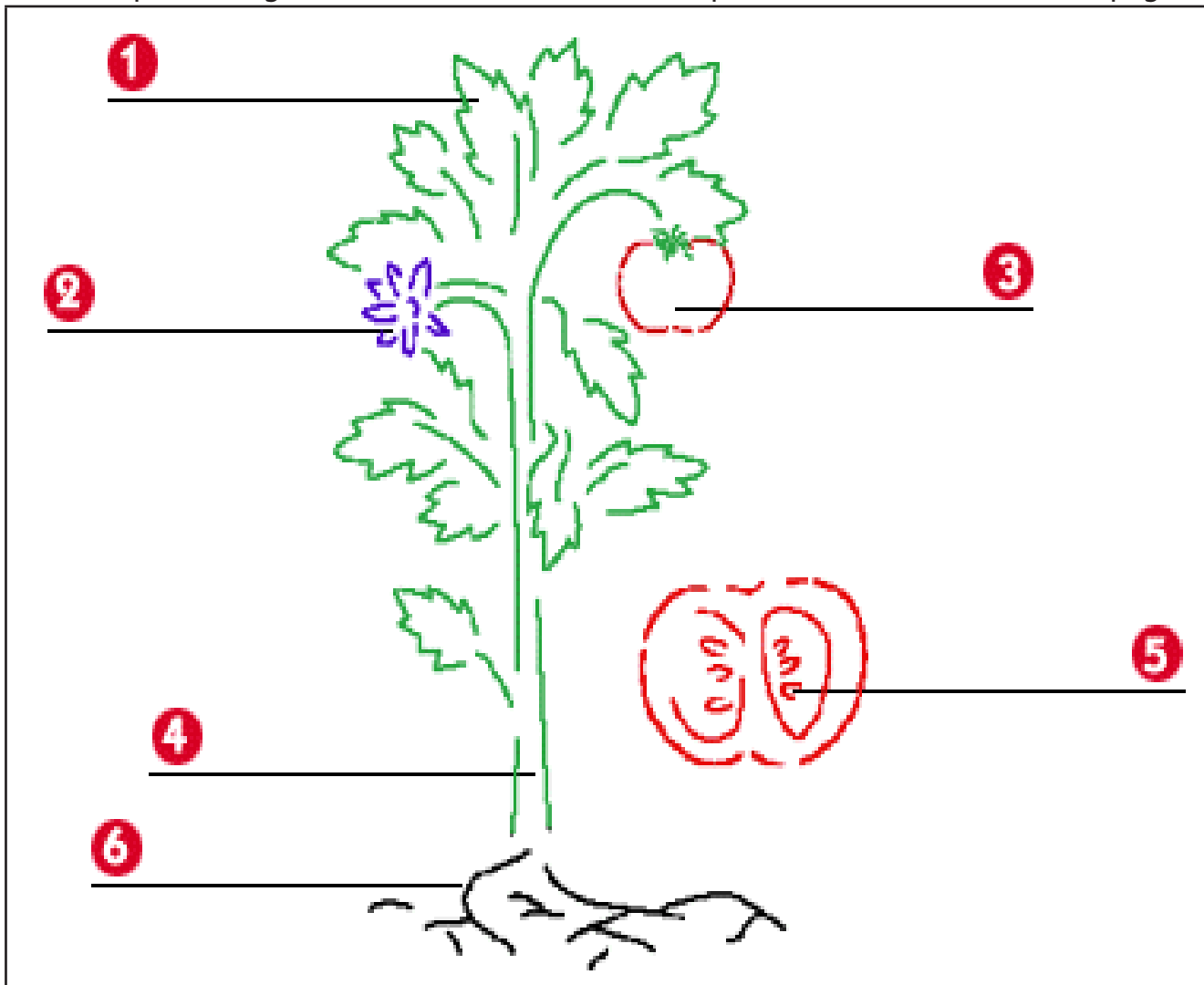
- When you have completed the follow-up discussion, have each team trade their handouts with another group. Revisit the area and have each group identify another group's transect based on what they reported.
- Ask the following questions again:
 - Did anything surprise you?
 - What was the most interesting thing you observed?
 - Do you think if you made a longer transect, maybe 96 feet long (four times larger than what you did) you would find different things? Why or why not?
 - Again, why do you think transects may be important tools for scientists to use when studying tundra?

Extension Activity: Plant Pressings

- Have the students collect a variety of plants from the local environment. Students will use the plants to create plant pressings. You will need plants, wax paper, and an iron. Students will place their plants between two pieces of wax paper and use the iron to press the plants flat. Display the plant pressings throughout the room. Have the Students label their plants.

Parts of a Plant

Label the plant using the correct terms. The terms are provided at the bottom of the page.



Stem

Roots

Fruits

Leaves

Flower

Seeds

Plant Parts and Their Functions

Read the following definitions. Using the Internet or other available resources, match the correct definition to each part of the plant.

Term: _____

ORIGINATE FROM THE LOWER PORTION OF THE PLANT AND ARE IN THE SOIL. THEIR FUNCTIONS ARE TO ABSORB NUTRIENTS AND MOISTURE, ANCHOR THE PLANT IN THE SOIL, SUPPORT THE STEM, AND STORE FOOD.

Term: _____

THE UPPER PART OF THE PLANT, WHICH BEARS BRANCHES, LEAVES, FLOWERS, AND FRUITS. IT IS GENERALLY GREEN WHEN YOUNG AND LATER OFTEN BECOMES WOODY AND DARK BROWN. IT CONDUCTS WATER AND MINERALS FROM THE ROOT TO THE LEAVES.

Term: _____

PROVIDE TREES WITH ALL THEIR FOOD BECAUSE THEY TURN SUNLIGHT INTO FOOD THROUGH ENERGY AND PHOTOSYNTHESIS. THEY ALSO PROVIDE OXYGEN IN THE AIR WE BREATHE.

Term: _____

ARE USUALLY THE SHOWIEST PART OF A PLANT. THEIR BEAUTY AND FRAGRANCE ATTRACT POLLINATORS (INSECTS OR BIRDS) THAT PLAY AN IMPORTANT ROLE IN THE REPRODUCTIVE PROCESS.

Term: _____

THE FLESHY STRUCTURE OF CERTAIN PLANTS THAT MAY BE SWEET AND EDIBLE IN THE RAW STATE, SUCH AS APPLES, ORANGES, GRAPES, ETC. IT ALSO CONSISTS OF SEEDS, WHICH ARE FOR PROPAGATION OF THE PLANT.

Term: _____

CONTAIN FOOD, WHICH SUPPLIES ENERGY AND MATERIALS FOR GROWTH UNTIL THE PLANT GROWS ITS FIRST LEAVES ABOVE GROUND.

Name: _____

Needs vs. Wants

Use scissors to cut out each card. Divide the cards into two piles. One pile will be things that people **NEED** to live, and one list will be things that people might **WANT**. Remember that each partner should agree to which pile the card belongs.

CANDY	WATER	CARS	COMPUTER
SHELTER	FOOD	TABLE	CLOTHES
MONEY	SOAP	DISHES	BOOKS

Name: _____

Something Is Missing

PLANT:	MISSING:
--------	----------

PREDICTIONS

OBSERVATIONS

DAY 1:
DAY 2:
DAY 3:
DAY 4:
DAY 5:

FINDINGS

Name: _____

Something Is Missing

PLANT:	MISSING:
--------	----------

PREDICTIONS

OBSERVATIONS

DAY 1:
DAY 2:
DAY 3:
DAY 4:
DAY 5:

FINDINGS

Name: _____

Something Is Missing

PLANT:	MISSING:
--------	----------

PREDICTIONS

OBSERVATIONS

DAY 1:
DAY 2:
DAY 3:
DAY 4:
DAY 5:

FINDINGS

Name: _____

Something Is Missing

PLANT:	MISSING:
--------	----------

PREDICTIONS

OBSERVATIONS

DAY 1:
DAY 2:
DAY 3:
DAY 4:
DAY 5:

FINDINGS

Name: _____

Something Is Missing

PLANT:	MISSING:
--------	----------

PREDICTIONS

OBSERVATIONS

DAY 1:
DAY 2:
DAY 3:
DAY 4:
DAY 5:

FINDINGS

Name: _____

Plant Habitats

PLANT HABITAT: _____

CLIMATE CONDITIONS

ILLUSTRATIONS

--	--

PROBLEMS FOR PLANTS

--

Name: _____

Plant Adaptations

PLANT HABITAT: _____

PHYSICAL CHARACTERISTICS

ILLUSTRATION

--	--

ADAPTATIONS

--

Name: _____

Transect Field Study

Part I: Choose an area that has a variety of plant types. Set up your transect. Remember to place your string as close to the ground as you can and in a straight line. Stake both ends, making the string as tight as you can. Mark your string into four equal parts by tying a piece of flagging tape onto the string.

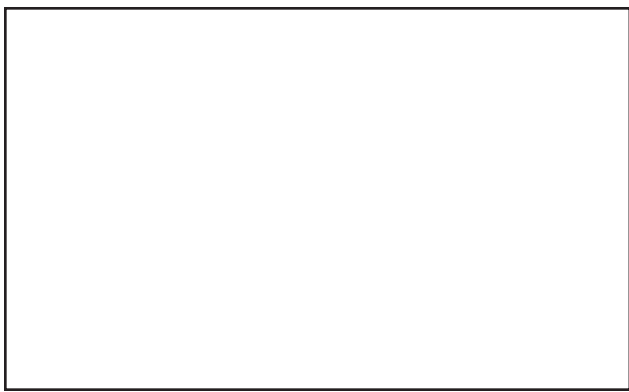
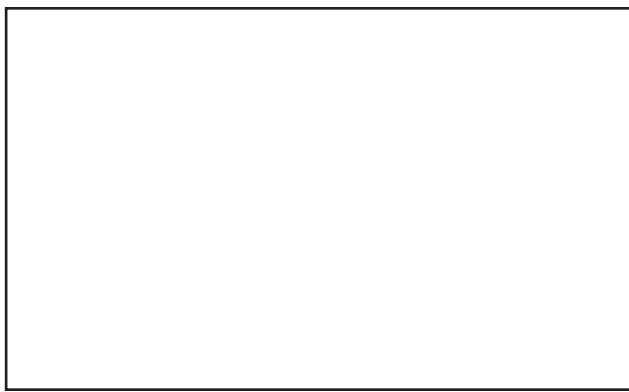


Part II: Make a sketch of your transect below.



Name: _____

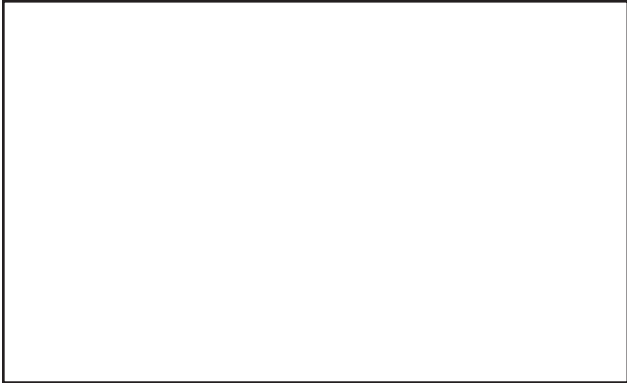
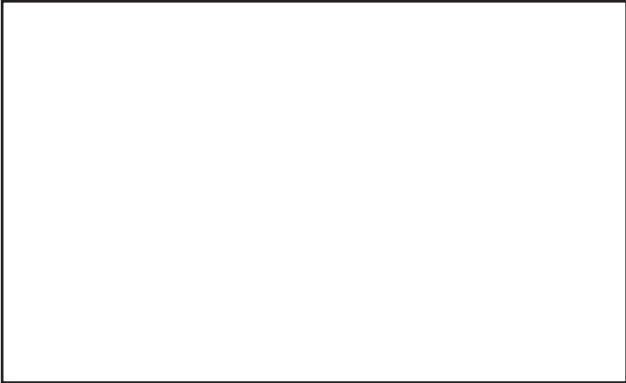


Transect Field Study

Part III: Observe the plants touching your string. In the boxes below, draw the plant (include only the feature used to identify it, such as the leaves or bark) and try to identify the different species. Count the number of identical plants along the transect.

<p>PLANT NAME: DRAW IT BELOW:</p> 	<p>PLANT NAME: DRAW IT BELOW:</p> 
<p>QUANTITY IN SECTION 1: QUANTITY IN SECTION 2: QUANTITY IN SECTION 3: QUANTITY IN SECTION 4:</p>	<p>QUANTITY IN SECTION 1: QUANTITY IN SECTION 2: QUANTITY IN SECTION 3: QUANTITY IN SECTION 4:</p>
<p>PLANT NAME: DRAW IT BELOW:</p> 	<p>PLANT NAME: DRAW IT BELOW:</p> 
<p>QUANTITY IN SECTION 1: QUANTITY IN SECTION 2: QUANTITY IN SECTION 3: QUANTITY IN SECTION 4:</p>	<p>QUANTITY IN SECTION 1: QUANTITY IN SECTION 2: QUANTITY IN SECTION 3: QUANTITY IN SECTION 4:</p>

Name: _____

Transect Field Study

<p>PLANT NAME: DRAW IT BELOW:</p> 	<p>PLANT NAME: DRAW IT BELOW:</p> 
<p>QUANTITY IN SECTION 1: QUANTITY IN SECTION 2: QUANTITY IN SECTION 3: QUANTITY IN SECTION 4:</p>	<p>QUANTITY IN SECTION 1: QUANTITY IN SECTION 2: QUANTITY IN SECTION 3: QUANTITY IN SECTION 4:</p>
<p>PLANT NAME: DRAW IT BELOW:</p> 	<p>PLANT NAME: DRAW IT BELOW:</p> 
<p>QUANTITY IN SECTION 1: QUANTITY IN SECTION 2: QUANTITY IN SECTION 3: QUANTITY IN SECTION 4:</p>	<p>QUANTITY IN SECTION 1: QUANTITY IN SECTION 2: QUANTITY IN SECTION 3: QUANTITY IN SECTION 4:</p>

Mark Breakdown

	Mark Breakdown	Final Mark
Lesson 1: Reading for Meaning		
Predicting	2 marks / section of chart	/6
Important Vocabulary	3 marks / question	/18
Journal Response	Illustration - 3 marks Response - 3 marks	/6
Lesson 2: Character, Setting, and Plot		
Character: Inuujat	2 marks / box	/10
Character: Grandmother	2 marks / box	/10
Setting	Completion	/10
Plot	2 marks / row	/6
Tundra Fact Sheet	1 mark / question	/12
Elders	2 marks / question	/12
Lesson 3: Plants and the Environment		
Plant Glossary	Chart - 5 marks Presentation - 5 marks	/10
Littering Poster	Completion - 5 marks Creativity - 5 marks	/10
Plants in Our Community	Completion	/10
Unit Reflection	Completion	/10
Lesson 4: All about Plants		
Parts of Plant	1 mark / label	/6
Plant Parts and Their Functions	2 marks / answer	/12
Something Is Missing	5 marks / day	/20
Plant Habitats	Completion	/10
Plant Adaptations	Completion	/10
Transect Field Study	Completion	/20
		Total /198