



Teacher's guide

**généielab.**

# Intro

Digital culture plays a key role in today's world. Understanding and taming it is becoming essential for educators.

GénieLab's activity addresses digital education through an introduction to programming.

*Fun, educational and interactive, Wally, the walrus who codes and decodes immerses students in a quest punctuated by logic games and puzzles to solve. Wally learns how to send secret messages using the ancient language of Morse code, while introducing students to programming and coding.*

*- Helder Manuel Cintrao, educational consultant*

Although the main objective of this kit is to introduce children to the basics of programming, it also contributes to the development of French - more specifically, the "reading" skill - and mathematical knowledge related to measurement, as well as to learning related to the science and technology program.

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- The history of walrus in the Maritimes

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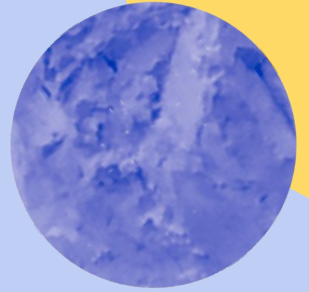
- Chapter 5: The compass
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- Chapter 6: Icebergs
- Installation
- Reading comprehension

# Module 1

1. Educational planning
2. Installation
3. Answers to additional activities
  - Walrus body parts (Cycle 2)
  - The Atlantic walrus ecosystem
  - Northern Canada
  - The history of walrus in the Maritimes



# Module 1 : THE WALRUS

**School level:** 2nd and 3rd cycle primary

## Themes

- Atlantic walruses
- The Inuit of Canada
- The Arctic ecosystem
- The history of walruses in the Maritimes

## Evaluation Quiz 1

Subject: French, language of instruction

Competency: C2: Read a variety of texts

Criterion: Explicit comprehension

## Module sequence

1. Wally and the Great Storm, Part
2. Walruses of Canada
3. The story of Canada's walruses

4. Quiz 1
5. Additional printable activities (optional)

## Digital resources

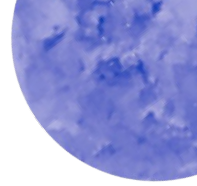
- <https://www.genielab.co>
- <https://makecode.microbit.org/>

## Literary resources

- [Morse](#)
- [The walrus](#)
- [The Inuit](#)
- [Life in the Arctic](#)

[Student workbook to print](#)

# Module 1 : Installation



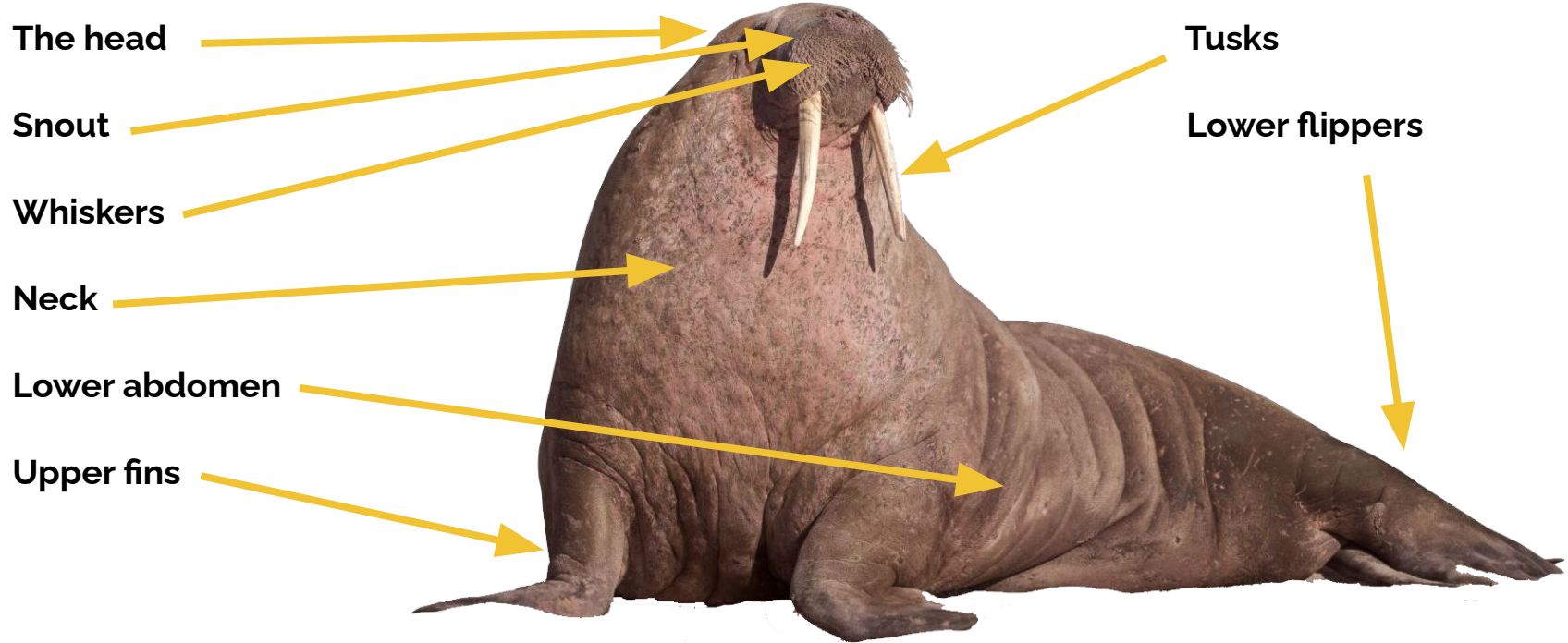
## A. Individual path

- Students have a Wally kit and a computer with Internet access. Everyone progresses at their own pace.

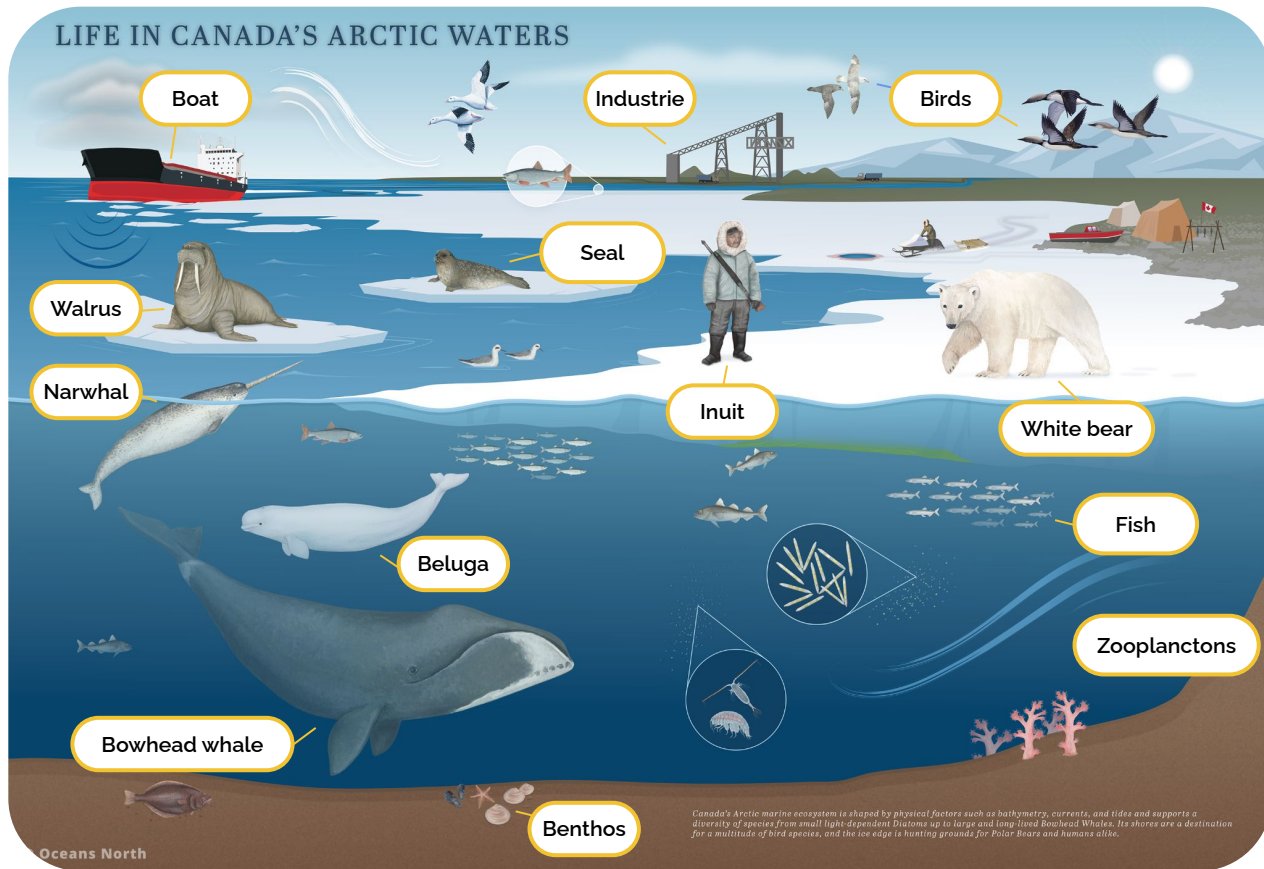
## B. Group progress

- The teacher and/or facilitator projects the activity in front of the class. The learning process is carried out in groups, using a lecture method. The information capsules are read aloud to the students, and the quizzes are taken by hand.

# Walrus parts: corrected

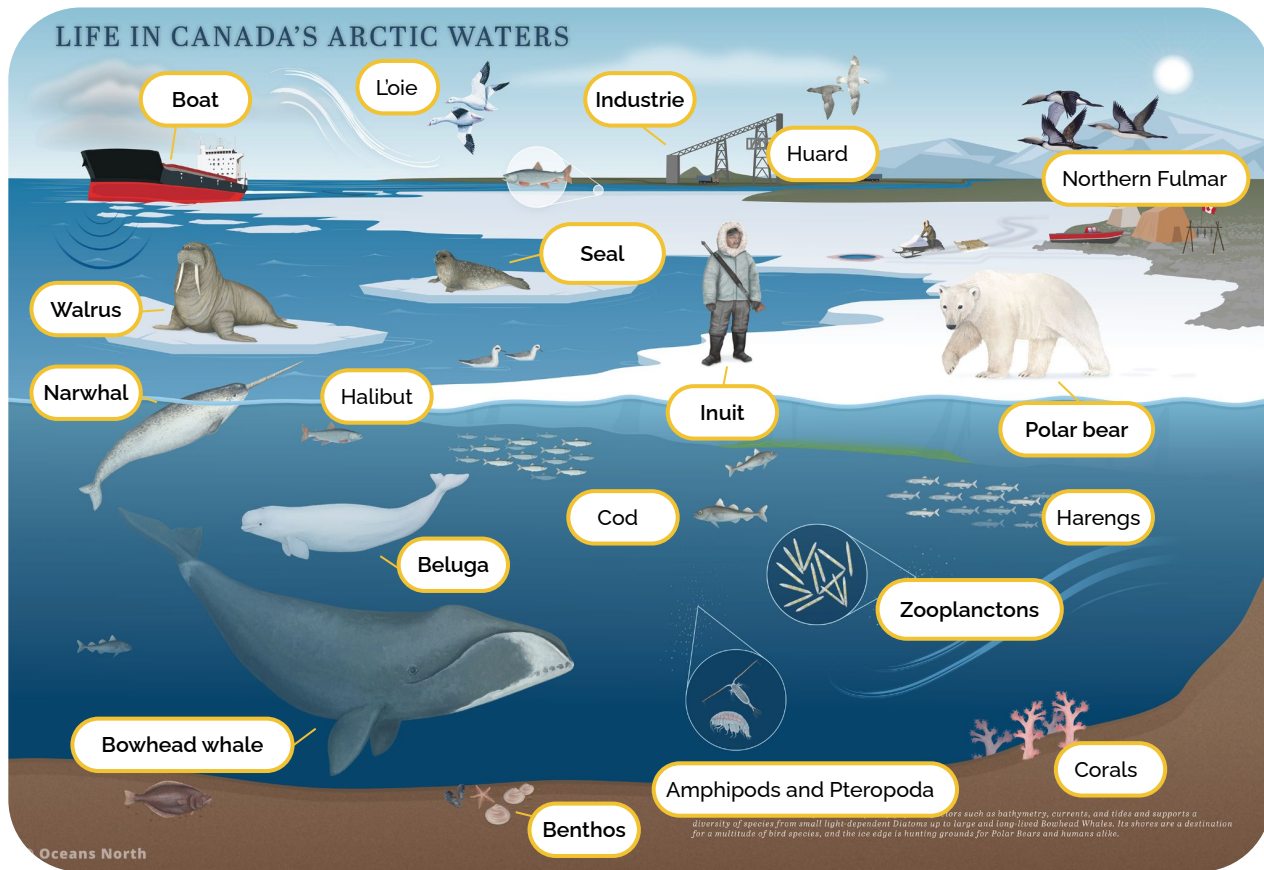


# The Atlantic walrus ecosystem: corrected version 2nd cycle






# The Atlantic walrus ecosystem: corrected version 3rd cycle



# The north of Canada: corrected

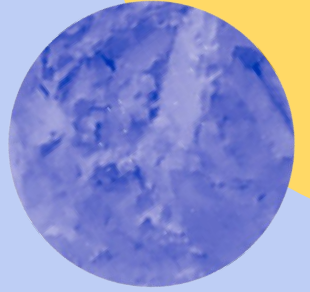


# History of walrus in the Maritimes: corrected version

<p>"Around this island, there are several large beasts like great oxen, which have two teeth in their mouths like elephants and live in the sea". - Jacques Cartier 1534</p>	<p>The first peoples of the Mi'kmaq nation have been hunting walrus on the islands for 8,000 years.</p>	<p>In the 16th century, the walrus became a prime prey for its blubber and ivory tusks.</p>
<p>Walrus bones and tusks are still found on the Magdalen Islands two centuries after their disappearance.</p>	<p>Walrus oil was considered an inexhaustible resource in the early 18th century.</p>	<p>The last walrus was seen in 1799 on the Magdalen Islands.</p>
<p>Fishermen from the New England came to hunt walrus by the thousand in 1774.</p>	<p>"Acadian Man "</p>  <p><i>Homme Acadien</i></p>	<p>The presence of walrus attracted the islands' first employer, Richard Gridley, who hired 22 Acadians in 1763 to supply and operate an oil mill, the <i>Sea Cow Fishery</i>.</p>

# Module 2

1. Educational planning
2. Installation
3. Answers to additional activities
  - Your own Chappe telegraph
  - Code and decode Morse code



# Module 2: The morse code

[Student workbook to print](#)

**School level:** 2nd and 3rd primary cycles

## Themes

- Morse code
- History of communication technologies
- Programming a nanocomputer to emit sound and light

## Evaluation Quiz 2-a

Discipline: French, language of instruction

Competency: C2: Reads a variety of texts

Criteria: Uses appropriate strategies\* (see below)

\* This exercise can be used to provide feedback to students, but should not be considered as part of the teacher's judgment.

## Evaluation Quiz 2-b

Discipline: Science and technology

Competency: C2: Uses the tools, objects and processes of science and technology

Criteria: Instrument handling (Morse code)

## Module sequence

- Wally and the Great Storm, Part 2
- The history of Morse code and the telegraph
- What is Morse code
- Programming challenge
- Quiz 2
- Additional printable activities (optional)

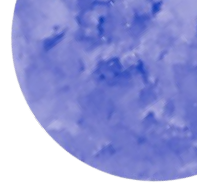
## Digital resources

- <https://www.genielab.co>
- <https://makecode.microbit.org/>

## Literary resources

- [Junior Atlas of Inventions](#)
- [Great inventions in comics](#)
- [The big book of secret codes](#)
- [100 unusual facts about numbers, computers and codes](#)

# Module 2 : installation



## A. Individual path

- Students have a Wally kit and a computer with Internet access. Everyone progresses at their own pace.

## B. Classroom progression

- The teacher and/or facilitator projects the activity in front of the class. The learning process is carried out in groups, using a lecture method. The information capsules are read aloud by the students, and the quizzes are taken by a show of hands.

# Morse code encoded and decoded: corrected

Inuit      •• / —• / •• — / •• / —

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Walrus      • — — / • — / • — •• / • — • / •• — / •••

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Beacon      —••• / • / • — / —• —• / — — — / —•

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Telegraph      — / • / • —•• / • / — —• / • —• / • — / • — —• / ••••

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Iceberg      •• / —• —• / • / —••• / • / — —• / — —•

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Programmation      • — —• / • —• / — — — / — —• / • —• / • — / — — / — — / •• /  
—• / — —•

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Arctic      • — / • —• / —• —• / — / •• / —• —•

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S.O.S      ••• / — — — / •••

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Mystic      — — / —• — — / ••• / — / •• / —• —•

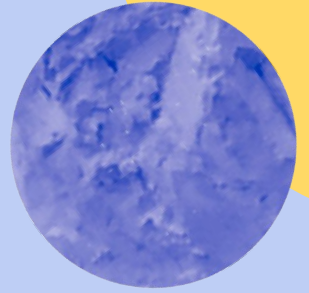
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Atlantic      • — / — / • —•• / • — / —• / — / •• / —• —•



# Module 3

1. Educational planning
2. Installation
3. Evaluation grid
4. Answers to additional activities
  - Identifying icebergs





# Module 3: PHARES PART 1

**School level:** 3rd primary cycle

## Theme

- Programming a nanocomputer to emit sound and light

## Evaluation [\(evaluation grid\)](#)

Discipline: Science and technology

Competency: Uses the tools, objects and processes of science and technology

Criterion: Instrument handling (nano-computer)

## Module sequence

1. Wally and the Great Storm, Part 3
2. Programming challenge
3. Additional printable activities (optional)

## Digital resources

- <https://www.genielab.co>
- <https://makecode.microbit.org/>

## Literary resources

- [Junior Atlas of Inventions](#)
- [Great inventions in comics](#)
- [The big book of secret code](#)
- [100 unusual facts about numbers, computers and codes](#)

[Student workbook to print](#)

# Module 3 : Installation



## A. Individual path

- Students have a Wally kit and a computer connected to the Internet. Everyone progresses at their own pace.

## B. Group progress

- The teacher and/or facilitator projects the activity in front of the class. A Wally kit and a computer are given to each student (or in teams of two per computer) for this module. Students log on to <https://makecode.microbit.org/> and the teacher presents the activity to the class.

# Evaluation grid

## Instrument handling (nano-computer)

	<b>A</b> (100%)	<b>B</b> (60%)	<b>C</b> (50%)
<b>Evaluation levels</b>	The student will be able to use the makecode application and upload the code to the micro:bit in order to light the diodes. He will be able to effect the 3 images proposed in the <i>do it yourself</i> section.	The student is in action, trying to get the micro:bit to work without succeeding in uploading the code to it.	Lack of action and commitment on the part of the student despite support.

In this activity, student support is not an evaluation criterion.

# Identifying icebergs: answer key

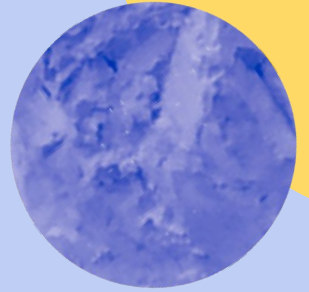


A (-5, 8)    B (4, 7)    C (-4, -3)    D (6, -3)    E (-8, -6)  
F (2, 1)    G (-6, 4)    H (8, 7)    I (1, -8)    J (7, -7)

# Module 4

1. Educational planning
2. Installation
3. Evaluation grid
4. Answers to additional activities

- Lighthouses of Quebec



# Module 4: Lighthouse PART 2

**School level:** 3rd primary cycle

## Theme

- Programming a nanocomputer to emit sound and light

## Evaluation (evaluation grid)

Discipline: Science and technology

Competency: Uses the tools, objects and processes of science and technology

Criterion: Instrument handling (nano-computer)

## Module sequence

1. Wally and the Great Storm, Part 4
2. Programming challenge
3. Wally and the Great Storm, Part 5
4. Additional printable activities (optional)

## Digital resources

- <https://www.genielab.co>
- <https://makecode.microbit.org/>

## Literary resources

- [Junior Atlas of Inventions](#)
- [Great inventions in comics](#)
- [The big book of secret codes](#)
- [100 unusual facts about numbers, computers and codes](#)

[Student workbook to print](#)

# Module 4 : Installation



## A. Individual path

- Students have a Wally kit and a computer connected to the Internet. Everyone progresses at their own pace.

## B. Group progress

- The teacher and/or facilitator projects the activity in front of the class. A Wally kit and a computer are given to each student (or in teams of two per computer) for this module. Students log on to <https://makecode.microbit.org/> and the teacher presents the activity to the class.

# Evaluation grid

## Instrument handling (nano-computer)

	<b>A</b> (100%)	<b>B</b> (60%)	<b>C</b> (50%)
<b>Evaluation levels</b>	The student is able to operate the micro:bit so that it switches on and off by emitting a sound.	The student is in action, trying to get the micro:bit to switch on and off by emitting a sound, but without succeeding.	Lack of action and commitment on the part of the student despite support.

In this activity, student support is not an evaluation criterion.

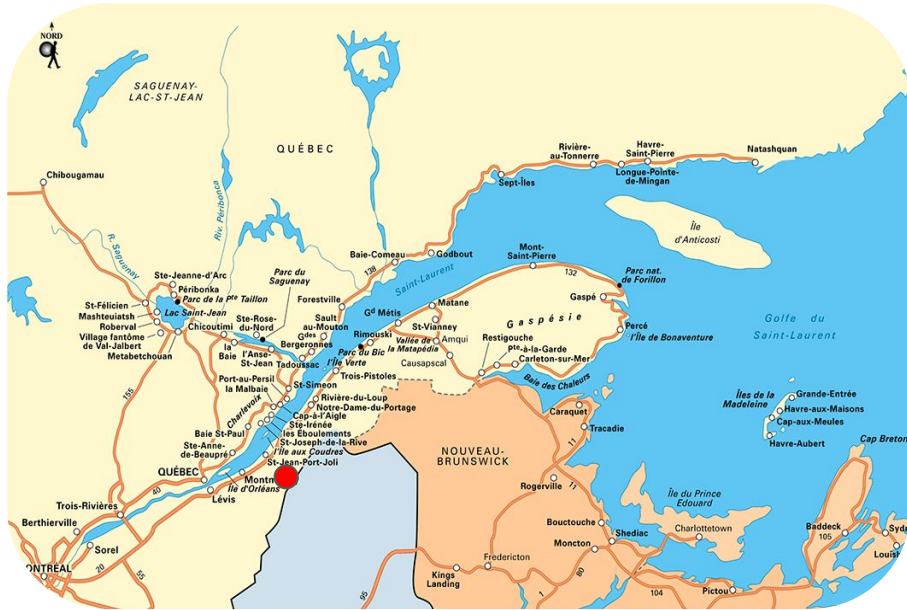


# Quebec lighthouses: Example

<b>Lighthouse name</b>	Île-du-Pot-à-l'Eau-de-Vie lighthouse		
<b>Construction date</b>	1861	<b>Is he still in business?</b>	yes
<b>Nearest town</b>	Saint-André de Kamouraska		
<b>Administrative region</b>	Bas Saint-Laurent		
<b>What can you tell us about its history?</b>			
The lighthouse was built in 1861 and closed in 1964. It is now an inn.			

# Quebec lighthouses: an example

Can you draw your lighthouse on

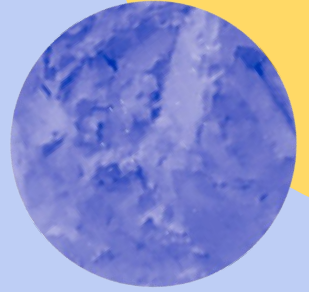


Can you draw your



# Module 5

1. Educational planning
2. Installation
3. Evaluation grid
4. Answers to additional activities
  - The compass
  - Compass navigation



# Chapter 5: THE BOUSSOLE

**School level:** 3rd primary cycle

**Theme:**

- Programming a nanocomputer to emit sound and light
- History of science and technology:  
The compass

**Evaluation (evaluation grid)**

Discipline: Science and technology

Competency: Uses the tools, objects and processes of science and technology

Criterion: Instrument handling (nano-computer)

**Chapter flow**

1. Wally and the Great Storm, part 6
2. History of the compass

3. Programming challenge
4. Quiz 5
5. Additional printable activities (optional)

**Digital resources**

- <https://www.genielab.co>
- <https://makecode.microbit.org/>

**Literary resources**

- [Junior Atlas of Inventions](#)
- [Great inventions in comics](#)
- [The big book of secret codes](#)
- [100 unusual facts about numbers, computers and codes](#)

[Student workbook to print](#)

# Module 5 : installation



## A. Individual path

- Students have a Wally kit and a computer connected to the Internet.

Everyone progresses at their own pace.

## B. Group progress

- The teacher and/or facilitator projects the activity in front of the class. A Wally kit and a computer are given to each student (or in teams of two per computer) for this module. Students log on to <https://makecode.microbit.org/> and the teacher presents the activity to the class.

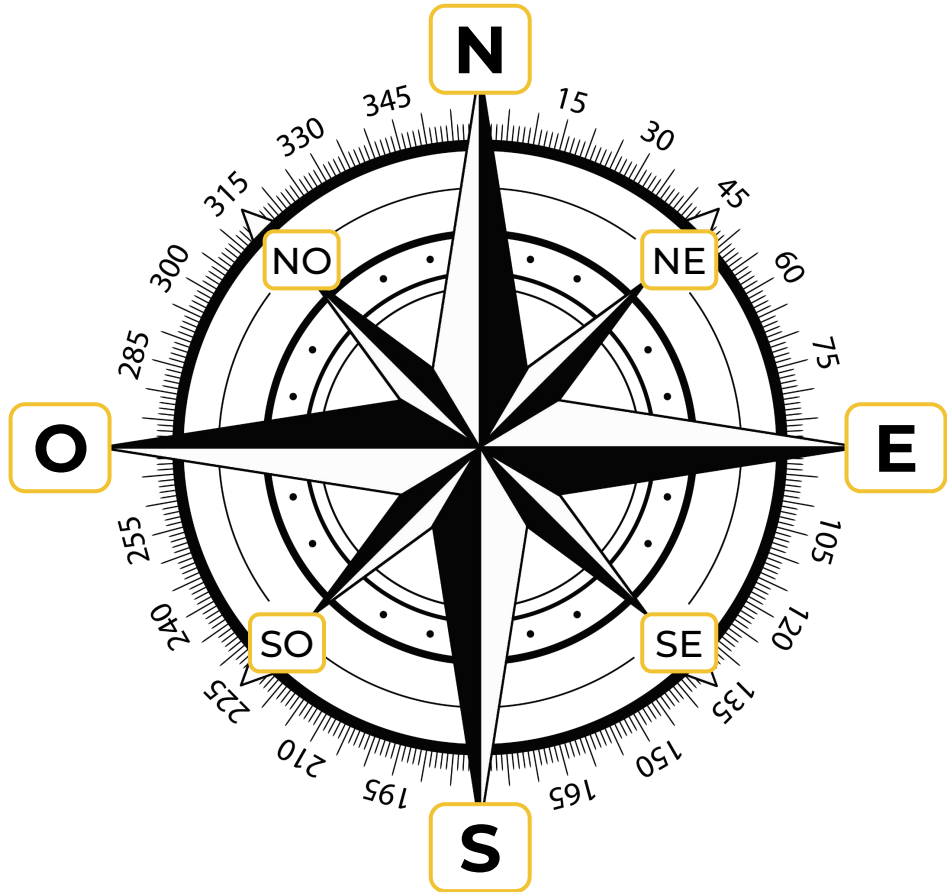
# Evaluation grid

## Instrument handling (nano-computer)

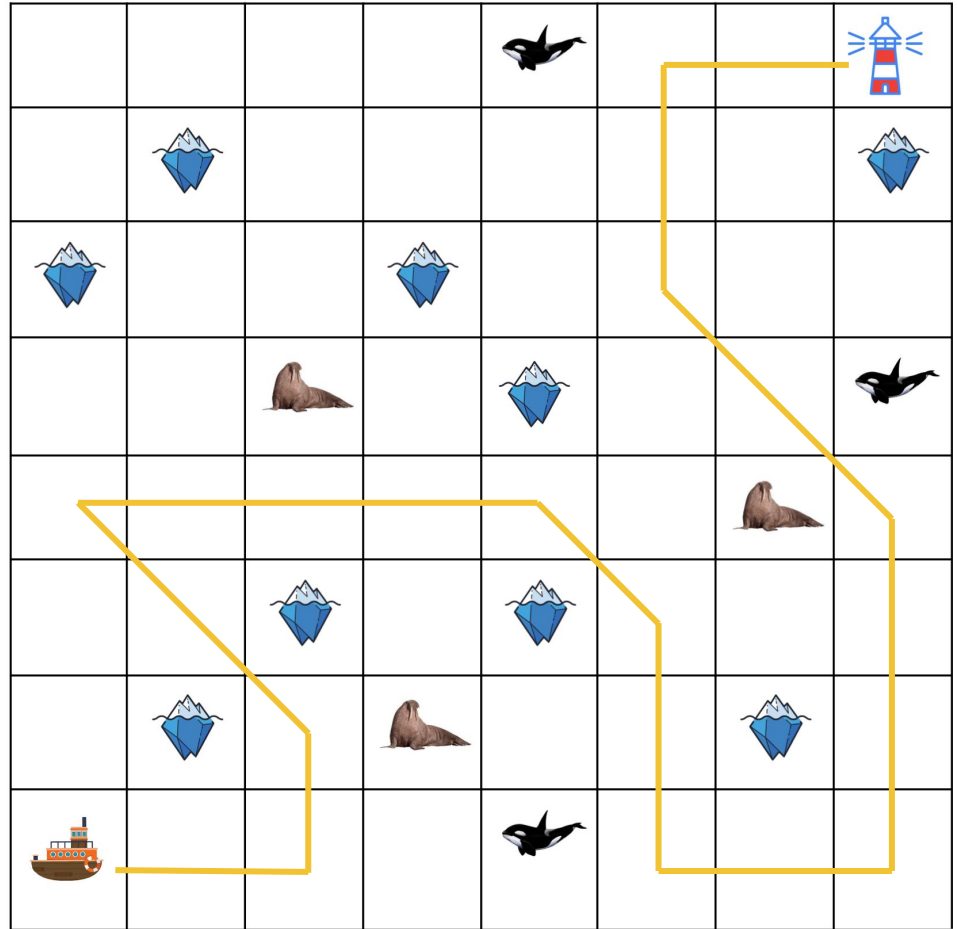
	<b>A</b> (100%)	<b>B</b> (60%)	<b>C</b> (50%)
<b>Evaluation levels</b>	Students can use the micro:bit as a compass. The 4 cardinal points are displayed according to movement.	The student is in action, trying to get the micro:bit to work as a compass, but failing.	Lack of action and commitment despite support.

In this activity, student support is not an evaluation criterion

# The compass: corrected version

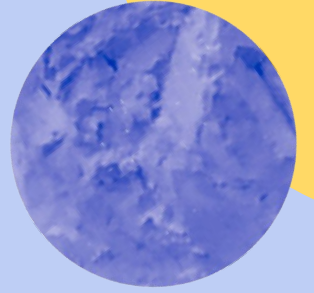


# Compass navigation : corrected





# Chapter 6



- 1. Educational planning**
- 2. Installation**
- 3. Answers to additional activities**

Wally and the Great Storm - Reading  
comprehension



# Chapter 6: ICEBERGS

**School level:** 2nd and 3rd primary cycles

## Themes

- Icebergs
- Famous shipwrecks

## Evaluation

Subject: French, language of instruction

Competency: C2: Read a variety of texts

Criterion: Explicit comprehension

## Chapter flow

1. Wally and the Great Storm, part 7
2. Glaciers
3. Shipwreck story
4. Scientific challenge
5. Wally and the Great Storm, part 8
6. Additional printable activities (optional)

## Digital resources

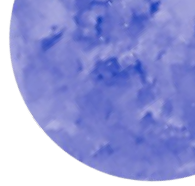
- <https://www.genielab.co>
- <https://makecode.microbit.org/>

## Literary resources

- [Ocean Atlas](#)
- [North Pole South Pole](#)

[Student workbook to print](#)

# Module 6 : Installation



## A. Individual path

- Students have a Wally kit and a computer connected to the Internet. Everyone progresses at their own pace.

## B. Classroom progression

- The teacher and/or facilitator projects the activity in front of the class. The learning process is carried out in groups, using a lecture method. The information capsules are read aloud by the students, and the quizzes are taken by a show of hands.

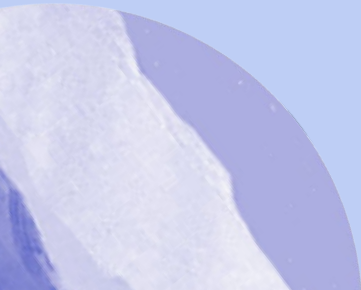
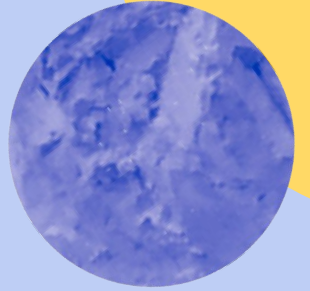
# Reading comprehension: answer key

1. What do you think the following terms mean?
  - a. Ingenious: **Intelligent**
  - b. Mystical: **A spiritual language (related to religious beliefs)**
  - c. Beacon: **Device designed to guide a navigator**
  - d. Fatigue: **Fatal**
2. Who is Wally? **A walrus, an ancient walrus**
3. What are all the sailors on the North Coast dreading? **The great storm**
4. What code does Wally use to save the villagers? **Morse code**
5. Underline all the verbs in this excerpt:
  - a. *The next day, the sky is clear again and nothing remains of the storm. The villagers on the trapped boat tell how they were saved by the walruses from an agonizing death. Many songs were sung to remember that fateful day and the heroes who turned darkness into light.*
6. How would you continue Wally's story? What would be his next adventure?
  - a. **(read students' ideas in large group)**

# End

You have completed the activity.

**Congratulations!**





# généielab.

DRIVING DIGITAL CREATION

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