



# Knowledge Construction Project

Select an inquiry project to suit you. You may choose to use 'Information Fluency' for knowledge construction or 'Solution Fluency', a renowned design thinking process facilitating high quality inquiry thinking for real-world problem solving.



# Coastal Conservation Knowledge Construction Project

## Your quest, should you choose to accept...

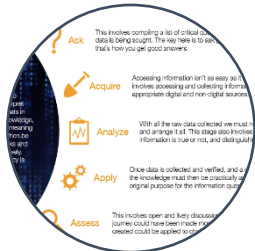
This project challenges you to be a researcher! Do you feel you have a strong understanding of coastal conservation? What would you like to know? Who would you like to share this information with to make a positive impact?

Having an opportunity to generate your own questions can dramatically enrich learning. This project is designed to engage you in a quality process to conduct meaningful research. Just make sure you work closely with your teacher/parents if you need help with difficult research questions. Most importantly, make time at the end to share and celebrate your learning with others, no matter how big or small.



### Step 1

What do you understand about coastal conservation? What would you like to know?



### Step 2

Use Information Fluency to lead you to conduct meaningful research



### Step 3

Share and celebrate



# Knowledge Construction Project

## Discuss

What does coastal conservation mean to you? What are you most concerned about? Use this page to highlight and discuss issues affecting your region. What makes you curious? What are you concerned about? What would you like to create?



### Climate Change

- Increasing ocean acidification
- Rising sea temperatures
- Changing oceanographic patterns
- Rising sand temperatures
- Increasing intensity and frequency of storms
- Rising sea levels
- Trophic cascades, phase shifts



### Unsustainable Coastal Development

- Reclamation of marine habitat
- Exposure of acid sulphate soils
- Sea dumping
- Dredging both capital and maintenance
- Increase light pollution and visual disturbance
- Dams, weirs and drainage altering freshwater flows
- Increase in noise and atmospheric pollution
- Hardening of surfaces



### Unsustainable Fishing Impacts

- Extraction of top-order predators with flow on effects
- Incidental catch of protected species and species of conservation concern
- Death of non-targeted, by-catch species
- Unregulated fishing of spawning aggregations
- Localised physical damage



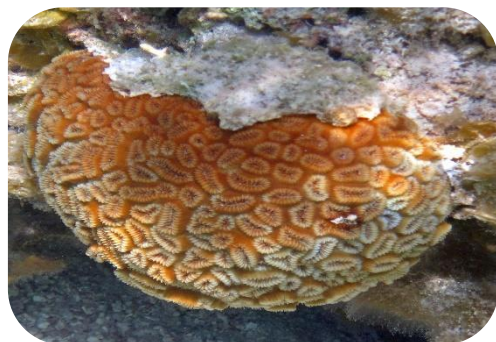
### Shipping Impact

- Noise impacts on marine wildlife
- Vessel strikes on marine wildlife
- Damage to habitats from ship groundings
- Oil/chemical spill
- Damage from repeated anchoring
- Increased turbidity from dredging maintenance
- Ship-sourced pollution
- Introduction of invasive species



### Declining Water Quality

- Increased levels of sediments in river plumes
- Increased levels of nutrients in river plumes
- Increased levels of herbicides in river plumes
- Increased levels of pharmaceuticals and urban pollutants
- Increased levels of industrial contaminants



### Diseases and Invasive Species

- Outbreaks of corallivorous predators
- Introduction of pests through ballast discharge
- Disease outbreaks
- Toxic algal blooms resulting in anoxia
- Outbreaks of invasive pests with cascading effects



### Marine Debris

- Smothering and entangling wildlife
- Ingestion causing death or injury
- Microplastics entering food chain
- Discarded fishing gear



### Dune Biodiversity Loss

- Anthropogenic impacts such as walking, vehicles
- Impact of introduced species
- Spreading of disease from vehicles

When you are ready, use Solution Fluency to guide you to develop a real-world solution.

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## Use Information Fluency to lead the way...

Information Fluency is designed to lead you through an inquiry research process. Use the following pages to capture your learning. Work as a class, small group, individually and/or remotely and complete one or more projects as time permits.

### information fluency

Information Fluency is the ability to intuitively interpret information in all forms and formats in order to extract the essential knowledge, authenticate it, and perceive its meaning and significance. The data can then be used to complete real-world tasks and solve real-world problems effectively. The process of Information Fluency is defined by the 5As.



Ask

This involves compiling a list of critical questions about what knowledge or data is being sought. The key here is to ask good questions, because that's how you get good answers.



Acquire

Accessing information isn't as easy as it used to be. This stage involves accessing and collecting informational materials from the most appropriate digital and non-digital sources.



Analyze

With all the raw data collected we must now authenticate, organize, and arrange it all. This stage also involves ascertaining whether information is true or not, and distinguishing the good from the bad.



Apply

Once data is collected and verified, and a solution is finally created, the knowledge must then be practically applied within the context of the original purpose for the information quest.



Assess

This involves open and lively discussions about how the problem-solving journey could have been made more efficient, and how the solution created could be applied to challenges of a similar nature.

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## Ask

This involves compiling a list of critical questions about what knowledge or data is being sought. The key here is to ask good questions, because that's how you get good answers.

**What would you like to know? Generate a list of good questions about Coastal Conservation.**



Coastal Conservation

# Knowledge Construction Project



Acquire

This stage involves accessing and collecting informational materials from the most appropriate digital and non-digital sources.

**How can we find out? Collect information from a trustworthy source and share it here.**

# Coastal Conservation Knowledge Construction Project



## Analyze

With all the raw data collected we must now authenticate, organise and arrange it. This stage also involves ascertaining whether information is true or not, and distinguish the good from the bad.

Organize the most useful and accurate information here.

**Heading**

- Key points

**Heading**

- Key points

**Heading**

- Key points

**Heading**

- Key points

**Heading**

- Key points

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## Apply

Once data is collected and verified, and a solution is finally created, the knowledge must then be practically applied within the context of the original purpose for the information quest.

**Can you put this new information to good use? How will you share your findings to best suit the purpose? Prepare your information for your target audience and share a copy here.**



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## Assess

This involves open and lively discussions about how the problem-solving journey could have been made more efficient, and how the solution created could be applied to challenges of a similar nature.

**How could you have been more efficient and accurate in your research process? What aspects of the process will you use in your next research project? How did your target audience respond?**

**What was great?**

**Even better if?**