# Water in Extreme Environments Planning to Teach Checklist

## How to use this tool:

1. Download or print the *Water in Extreme Environments Planning to Teach Checklist .* (optional)
2. Work through each section of the checklist in the order as shown below since each section builds on the prior information.
3. The Educator Planning & Reflection Notes section has key information and reflection prompts to help you plan for teaching. You can jot down your thoughts and questions for planning in this space. For example:
   * Flag items that need follow-up (for example, checking available materials or learning space needs).
   * Focus on capturing ideas that relate specifically to YOUR learners and programs.
4. This checklist takes ~120 minutes. For essential preparation only, focus on resources marked with a that will take   
   ~45 minutes.

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| STEP 1: Experience a Water in Extreme Environments Activity | |
| **Planning Steps** | **Educator Planning & Reflection Notes 📝** |
| **Experience a Water unit activity as your learners would.**  Find the Ready-SET-Go Activity on p. 7 of the [**Science Educator Guide**](https://planets-stem.org/wp-content/uploads/2025/07/Water-Educator-Guide-SCI.pdf) or [**Engineering Educator Guide**](https://planets-stem.org/wp-content/uploads/2025/07/Water-Educator-Guide-ENG.pdf)**.** Note this Activity is the same for both learning pathways. (~45-60 min) | This opening Activity for Water in Extreme Environments introduces learners to how scientists identify scarce water resources and work with engineers to design the technology to extract them. Use the following reflection prompts to help guide your thinking as you experience this Activity.  Use the following reflection prompts to help guide your thinking as you experience this Remote Sensing activity.   * The Our Ideas Poster is a feature of Remote Sensing that helps provide learners with a visual sense-making tool and encourages them to share ideas in their preferred language. *As you move through the Ready-Set-Go Activity, capture your ideas about additional ways you can support learners in successfully capturing their thoughts on the Our Ideas Poster.* * Learners will work together in groups for this activity. After reading through the activities, *what thoughts do you have for strategic and inclusive grouping strategies for learners*? * There are many opportunities to “Level-Up” in this activity. *Which, if any, Level-Ups do you feel you might include*? * This Activity includes teaching tips for “Supporting Learner Differences” to ensure all learners can equitably participate in the activities. *Are there any additional strategies you feel you need to include to modify the activities so learners can better participate*? |

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| STEP 2: Get a high-level view of the Water in Extreme Environments unit. | | |
| Planning Steps | Educator Planning & Reflection Notes 📝 | |
| Badge New with solid fill**Click on the Navigating the Water in Extreme Environments video**  This video shows how each activity builds on the previous one, leading learners toward proposing a solution in science or technology design in engineering. (~3 min*)* | * Which pathway(s) do you plan on offering your learners? | |
| Badge New with solid fill**Read the Water in Extreme Environments Pathway Storyline for Science and/or Engineering.**  The storyline provides a high-level overview of each activity in the Water in Extreme Environments Science and Engineering pathways and how they build on one another. (~10 min per pathway) | **SCIENCE PATHWAY STORYLINE**  **(**[**Science Pathway**](https://planets-stem.org/wp-content/uploads/2025/07/Water-Educator-Guide-SCI.pdf) **p. xxiii-xxv)**  Science activities intentionally build on one another.   * What ideas do you have to support learners who may miss a day of learning? * What key moments in this pathway can you use to help connect learners’ to career opportunities in science? | **ENGINEERING PATHWAY STORYLINE**  ([**Engineering Pathway**](https://planets-stem.org/wp-content/uploads/2025/07/Water-Educator-Guide-ENG.pdf) **p. xxiii-xxvi)**  Engineering activities intentionally build on one another.   * What ideas do you have to support learners who may miss a day of learning? * What key moments in this pathway can you use to help connect learners’ to career opportunities in engineering? |

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| STEP 3: Get to know the different features and teaching  supports found in the Remote Sensing Educator Guide. | | |
| Planning Steps | Educator Planning & Reflection Notes 📝 | |
| Badge New with solid fill**Reviewing Materials**  Review the material checklist for the science pathway. (~5 min) | **SCIENCE PATHWAY  (**[**Science Pathway**](https://planets-stem.org/wp-content/uploads/2025/07/Water-Educator-Guide-SCI.pdf) **pg. 2 and materials calculator)**   * What materials do you still need to purchase? * Where will you store materials between sessions? * What environment setup would work best for your group? | **ENGINEERING PATHWAY  (**[**Engineering Pathway**](https://planets-stem.org/wp-content/uploads/2025/07/Water-Educator-Guide-ENG.pdf) **pg. 2 and materials calculator)**   * What materials do you still need to purchase? * Where will you store materials between sessions? * What environment setup would work best for your group?   *(continued)* |
| **Planning for YOUR Learners’ Needs**:  Read the following teaching supports provided in the Educator Guide in the *Educator Resources to Support Learning* section on pages xx to xxii:   * Instructional Tips for Learning. * Ideas for Inclusion Activities * Inclusive Grouping Strategies * Ideas for Building Family & Community Connections.   These resources provide instructional strategies you may consider to help meet the needs of your learners. (~20 min read)  Explore some of the additional video resources on supporting unique learners’ needs (~3-4 mins each):   * [**Supporting Multilingual**](https://www.youtube.com/watch?v=b8ydknKE3L0) [**Learners**](https://planets-stem.org/videos/translanguaging/) * [**Supporting Indigenous**](https://www.youtube.com/watch?v=_-4WyGXqWXo) [**Learners**](https://planets-stem.org/videos/indigenous-learners/) * [**Supporting Learners with Diverse Physical and Sensory Abilities**](https://planets-stem.org/videos/diverse-physical-abilities/) | * Which strategies best match your learners' needs? * What are 1-2 new strategies you'd like to try? | |

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| STEP 4: Chart your course for how the Water in Extreme Environments  unit will be implemented into your current program. | | |
| Planning Steps | Educator Planning & Reflection Notes 📝 | |
| Badge New with solid fill**Planning for Water in Extreme Environments in your program:**  Review **sample schedules** to see examples of how the Science and Engineering Pathways can fit into an out-of-school time program.  These schedules will help you see how Remote Sensing fits into your schedule. Whether you've  got daily sessions or just a few hours a week, the PLANETS curriculum can fit your needs! (~10 min read) | * Which format might work best given your program’s schedule? * What adjustments might you need to make? | |
| Interested in learning more? Here are some recommended next steps  in your Water in Extreme Environments learning mission. | | |
| (*Optional*) Read through the Science/Engineering Educator Guide to understand how each activity builds on the next. Think about any preparation and space considerations you need to make. | **SCIENCE PATHWAY**   * What connections do you see between activities? * Which parts might need extra prep time? * What might your learners find most challenging or exciting? | **ENGINEERING PATHWAY**   * What connections do you see between activities? * Which parts might need extra prep time? * What might your learners find most challenging or exciting? |