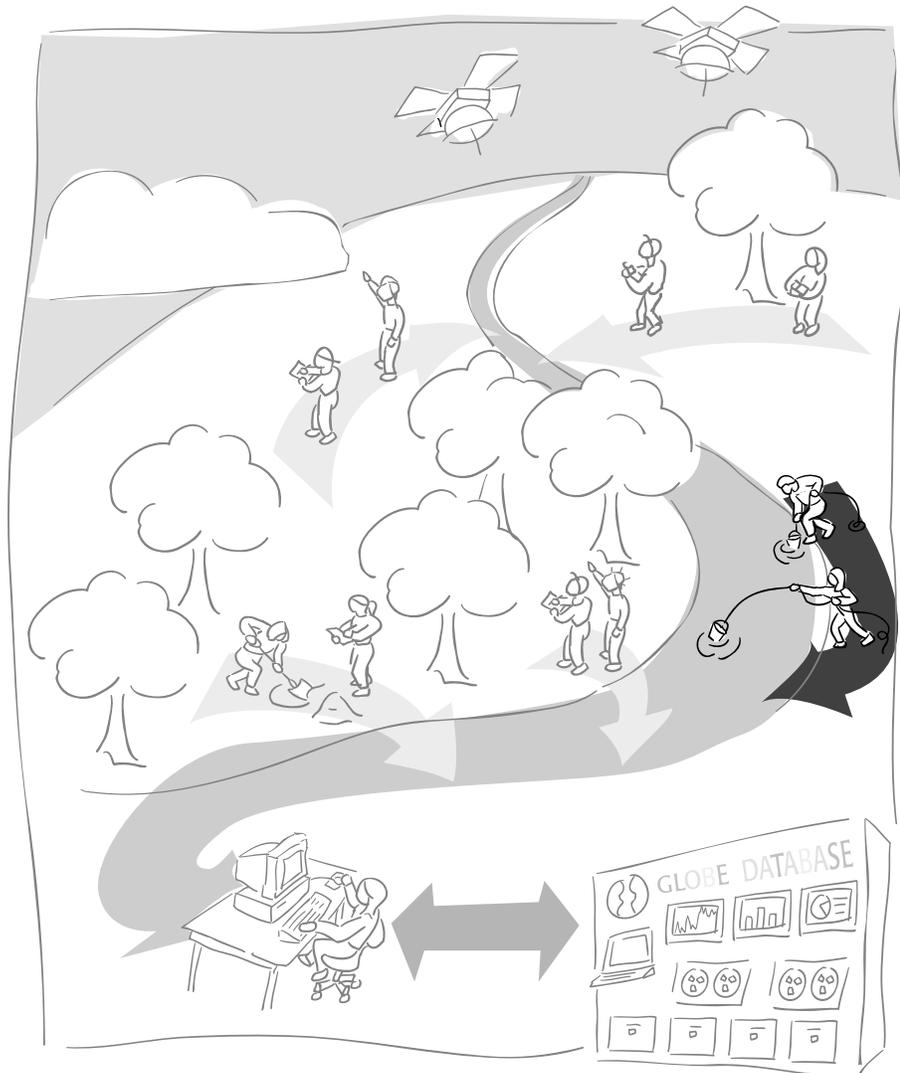


Hydrology Investigation



A GLOBE® Learning Investigation



Hydrology Investigation at a Glance



Protocols

Weekly Measurements

Basic
Transparency
Water Temperature
Dissolved Oxygen
Electrical Conductivity
Salinity
pH
Alkalinity
Nitrate

Optional Measurements

Salinity Titration (weekly)
Freshwater macroinvertebrates (twice a year)

Suggested Sequence of Activities

- Read the Introduction, especially the sections *What Measurements Are Taken* and *Getting Started*.
- The *Water Walk Learning Activity* sets the stage for developing a baseline knowledge and interest in your Hydrology Site.
- The *Model a Catchment Basin Learning Activity* provides the big picture view of the students' watershed and the water and study site in relation to this watershed.
- Map Your Hydrology Site. At the beginning of your study as part of defining your site, and once each year thereafter, create a map of the Hydrology Site and take photographs to send to GLOBE.
- The *Practicing Your Protocols Learning Activity* guides students through learning how to use the instruments and following the protocols so they collect reliable data.
- Begin Field Sampling. Go to the site and begin the weekly measurements for water.
- Use the *Looking at Data* section at the end of each protocol as a guide to examine your data, ask questions and interpret what you find. Start linking water data to other GLOBE measurements.
- Focus on Key Science Ideas by performing the following Learning Activities:
 - *Water Detectives* and *The pH Game* introduce students to key water chemistry variables and to the need using instruments to take certain measurements.
 - *Modeling Your Water Balance* lets students explore how to use their data for modeling.

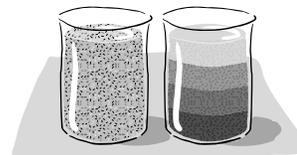




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Protocols

Instrument Construction, Site Selection, Site Documentation and Mapping, and Sampling Procedures	
Water Transparency Protocol	
Water Temperature Protocol	
Dissolved Oxygen Protocol	
Electrical Conductivity Protocol	
Salinity Protocol	
pH Protocol	
Alkalinity Protocol	
Nitrate Protocol	
Optional Protocols	
Freshwater Macroinvertebrates Protocol*	
Rocky Substrates in Running Water	
Multi-habitat (sampling a lake, pond, or stream with sandy or muddy bottom)	
Marine Macroinvertebrates Protocol*	
Salinity Titration Protocol*	



Learning Activities

Water Walk*	
Model a Catchment Basin	
Practicing Your Protocols*	
Water Detectives*	
The pH Game	
Modeling Your Water Balance	



Appendix

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* See the full e-guide version of the *Teacher's Guide* available on the GLOBE Web site and CD-ROM.

