Ocean Expedition

PRISM
Partnerships for Reform through Investigative Science and Math
Ocean Exploration

- Compass
- GPS
- Radar
- Navigator
- Birds
- Stars
- Currents
Why do you think there are so many different methods?

• People wanted to voyage farther and for longer distances
• Humans started to use the ocean for many different activities
• Technology is driven by the demands of society…
Humans use the ocean to...

- Discover new land
- Transport goods
- Investigate ocean life
- Study weather patterns
- Recreation (surf, swim, dive, etc.)
- Get food and resources
  - Medicine
  - Oil, energy
  - Seafood, salt
Why do we want to explore the ocean?

- Monitor the health of the ocean
- Make sure our resources and food sources are stable
- Observe patterns in nature
- Monitor and record changes over time
- Get a better understanding of ocean life
- 95% of the ocean is unexplored!
What should we use to navigate on our voyage?

• A. Traditional: Stars, birds, navigator, maps
• B. New: RADAR, GPS, maps
• C. Combination of both?
Which one do you think we should use?
What will we be doing on our 9 week voyage?

• Map our voyage and use navigation techniques
• Explore the depths of the ocean
• Observe & collect data on deep sea animals (sharks, tuna, whales and dolphins)
• Monitoring water quality
• Learn how to protect ocean resources
• Help with ocean conservation efforts
• SCIENTIFIC METHOD!
SCIENTIFIC METHOD

The Scientific Method

1. Ask a question
2. Do background research
3. Construct a hypothesis
4. Test your hypothesis by doing an experiment
5. Analyze your data and draw a conclusion
6. Report your results (Was your hypothesis correct?)
Questions we hope to answer...

- What techniques are used to navigate and explore the ocean?
- How do temperature, pressure and light change as you go deeper in the ocean?
- How do marine mammals eat and stay warm?
- How do scientist monitor our oceans health?
- What specialized techniques do ocean animals use to get their food?
- What are people doing to protect and conserve ocean resources?
Techniques to navigate and explore the ocean

- Maps
- GPS
- Compass
- Radar
- Navigator
- Birds
- Stars
- Currents
Latitude & Longitude

- Latitude: how far North or South you are
- Longitude: how far East or West you are
- Used together to find your location on Earth
- Like math x,y coordinates there are negative and positive numbers that help you find where you are

Hawaii
Any questions?
How deep can we go?