

### **Mission Concept (overview)**

The Worldwide Voyage of Hōkūle‘a called attention to our responsibility to care for our Earth. The navigators sailed their canoe Hōkūle‘a using the stars, sun, and swell to guide them around the world, relying on signs from nature and ancient wisdom to guide them to each destination. They were expert pathfinders. It would take us years to learn what they have accomplished, but we can gain an appreciation for what they know and are able to do with the use of a navigation tool, the compass.

### **Mission Objective (essential question)**

How can I use a compass to take a bearing?

### **Resources**

- Compasses (Note: You will not use the base plate compass for this activity.)
- [Coleman Compass with Led Light, Black](#) (approx. \$6.19 @ Amazon)
- Polynesian Voyaging Society website for further information: [www.hokulea.com/worldwide-voyage/](http://www.hokulea.com/worldwide-voyage/)

### **VIDEOS:**

[Compass 101- How to Use a Base Plate Compass](#) by MRCA Mountains Recreation & Conservation Authority (3:02 min)

[How to Use a Map and Compass to Take a Bearing](#) by Boy’s Life magazine (2:07 min)

[Polynesian Wayfinders](#) by SunEarthDays (9:34 min)

[Worldwide Voyage/The Star Compass](#) by OiwiTV (2:34 min)

[Polynesian Star Compass](#) (1:32 min)

### **Exploration (procedure)**

#### Part One

1. To give students a general overview of the parts of a compass and use, show video: [Compass 101- How To Use A Base Plate Compass](#)
2. Introduce basic parts of compass (orienting arrow, magnetic north arrow, directional terms: north, northeast, southeast, south, southwest, northwest, degrees)
3. Activity: Practice using compass in class:
  - Have class face the front of the class. Have students hold their compass near their midsection so that the Orienting N on the dial is pointing away from them, 90 degrees. Hold the compass in that position and rotate self until the magnetic “N” needle is aligned with the Orienting N. Ask: “What do you see 270 degrees west? (Students will name objects in the class in that direction.) “What do you see 180 degrees south? (Students will name objects in the class in that direction.) Continue to ask questions using different degrees and directions ex. 90 degrees east, 220 degrees SW. and so on until students are comfortable with the compass.
4. Repeat activity outdoors.

#### Part Two

- Note: You will need to select locations outdoors. The playground is a good place for this activity. On the playground, select and mark 6-8 locations with different objects like cones, chairs, and baseball plates, OR in large print, identify each location with fun names or alphabets, etc. Be sure to identify locations with markers that can easily be seen, and space out the locations as much as possible.

1. In class, pair students to work together. They will need folder paper, which will serve as their Data Sheet, pencil/pen, clipboard, and compass.
2. Prep Data Sheet. Tell students to fold paper in thirds lengthwise. Label the top of each section: Starting Point, Bearing, Destination. Instead of writing their names on the data sheet, the pair will identify their data sheet with a symbol/simple icon or write a nickname written on the upper right corner of the data sheet.
3. Activity:
  - Take students out to the field where you have set up your locations. Have each pair select one of the locations as their Starting point and another location as their Endpoint or Destination. Using their compass, they will take a bearing just as they did in Part One. In addition, they will count the number of steps it takes to get there. Students will record Starting point, bearing, and number of steps on their data sheet. They will leave Destination **blank**. Have pair move to another location and repeat if time permits.
  - Collect the data sheet from each pair. Shuffle papers and pass out to another pair.
  - Using the recorded data sheet they were given, the pair will position themselves on the recorded Starting point and use their compass to identify the Endpoint or destination. (Remind students to use reasonableness). They record that destination on that data sheet.
  - Stop activity. Collect all data sheets and return data sheets to owners. Owners will confirm the destinations.

### **Mission report (outcome)**

Students will become familiar with a compass.

Students will be able to take bearings using a compass.

Students will work cooperatively.

Students will use reasonableness to help them solve problems. (e.g. identifying destinations)

### **Debrief (explanation)**

Have students reflect on the activity. What successes did they experience? What challenges did they encounter? How can the compass help them out in the world? What connections can they make between what they learned in this activity and the navigators on the Hōkūle'a?