

Walk the Plank

In this activity, the HP 39gs automates the Captain's Game. In this game, the captain has an eight-foot plank hanging over the side of the ship. You are placed at the center of the plank with the ship to your left and a group of hungry sharks circling underneath the end to your right. You must move according to the captain's commands. Each command consists of three pieces of information:

- 1) which way you are to face (ship or sharks);
- 2) which direction to walk (forward or backward);
- 3) how many one-foot steps to take.

Turn on the HP 39gs and press the APLET key. Look for the HP aplet **WALK PLANK** (you may have to scroll). See your teacher if you don't have the aplet. Once you have **WALK PLANK**, highlight it, press the START menu key and read the starting note. Press the VIEWS key and choose **Take a walk** to get your first command. Keep in mind that the ship is always at location zero. You will have to tell the calculator your new position and it will keep track of your score. Keep choosing **Take a walk** until you wind up at (or over) one side of the plank. Choose **See Plot** to see a graphical illustration of the last command.

Exercises

- 1) Did you stay on the boat or fall into the water? How many moves did it take? How many locations did you get right?

Play the game again, but now choose **See plot** after every move to see a number line representation of the walk.

- 2) Did you stay on the boat or fall into the water? How many moves did it take? How many locations did you get right?
- 3) What do you think a negative location means in this game?

Choose **Set up plank** and make the length **10**. You will start at location 5. The number of steps in each command will remain 1, 2 or 3.

- 4) Should it take more or less moves than before?

Play the game with the new length.

- 5) How many moves did it take? How many locations did you get right? Was your prediction in Exercise 4 correct?

