



Your Brain on Sleep Activity Guide

Mission 3: Synaptic Sparks, Objective 4

Name:

The activity for this objective is to run a simulation that demonstrates the sleep cycles. During the simulation, you can disrupt a cycle and observe the result.

Students can work individually or with a partner for this activity.

1. Go to **File → Browse Files...** and open the file called **BRN_sleep_stages**

File opened

2. Go to **File → Save As** and rename the file **sleep_stages**

File saved as **sleep_stages**

3. Follow CodeTrek to:

- Assign **phase** a value, which will progress the cycle to the next sleep stage
- You will assign four values throughout the code

CodeTrek followed

NOTE: *When adding code, be very careful with the indenting, spelling and punctuation!*

4. Open the **Console** by clicking the “Open Console” icon (The console icon is just below the Toolbox icon.)



Console Panel opened

5. Run the code. On the Console, a prompt asks you how many hours of night-time sleep. Type your answer in the Console.

Number of hours entered in the console

6. Run through the simulation without any disruptions. Observe the results.

Observed first simulation - no interruptions

7. Run the simulation three more times, with the following scenarios. Observe the results each time.

- Select the number of hours 4 or less
- Select the number of hours as 6, but disrupt a sleep stage one time by pressing **BTN_A** or **BTN_B** during any of the cycles.
- Select the number of hours as 7 and disrupt the stages several times.

Observed three more simulations

8. Run the simulation again, and you decide on the number of hours, the type of disruptions, and where they occur. Observe the results.

Note: *You can run the simulation as many times as you want.*

My own simulation

Hours chosen:

Number of disruptions:

9. Answer the reflection question on the next page.

Reflection question



Reflection: From this objective and simulation, what did you learn about sleep and the brain?



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