Module
The New Science of Addiction: Genetics and the Brain

Comparing Brain Images

Abstract

A color-by-number comparison of PET scan images showing activity in a drug- free brain and the brain of a cocaine addict. For use with PET images on the *Drugs Alter the Brain's Reward Pathway* page in *The New Science of Addiction: Genetics and The Brain* module on our website (url above).

Learning Objectives

- Brain activity diminishes with drug use.

Logistics

Time Required

- **Class Time:** 15 minutes
- **Prep Time:** 10 minutes

Materials

Student handouts, computers with internet access, colored pencils or crayons

Prior Knowledge Needed

None

Appropriate For:

Primary Intermediate Secondary College

Instructions

1. Log on to The New Science of Addiction: Genetics and the Brain module (url above) and visit the Drugs Alter the Brain's Reward Pathway page.
2. Under the Changes Last Long After Use heading, click on the mouse graphic to alternate between PET images of a normal functioning brain and the brain of a cocaine addict.
3. Color the normal-functioning brain activity on page S-1 using the appropriate PET image as a guide.
4. Color the brain activity of a cocaine addict on page S-1 using the appropriate PET image as a guide.

Hint: The numbered areas in the brains on page S-1 correspond to the following colors:

1 = red
2 = yellow
3 = green
4 = light blue
5 = dark blue

Note: *red and yellow indicate areas of high activity*

Credits

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Brendan Nicholson, Genetic Science Learning Center (illustrations)

Funding

NIDA NATIONAL INSTITUTE ON DRUG ABUSE

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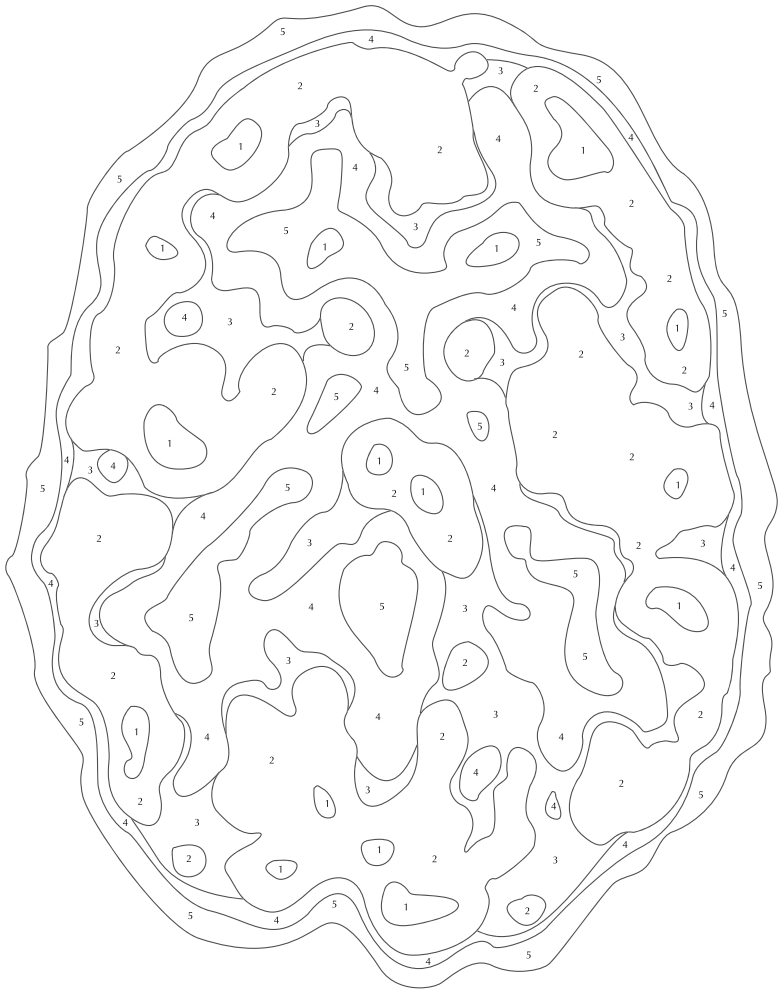
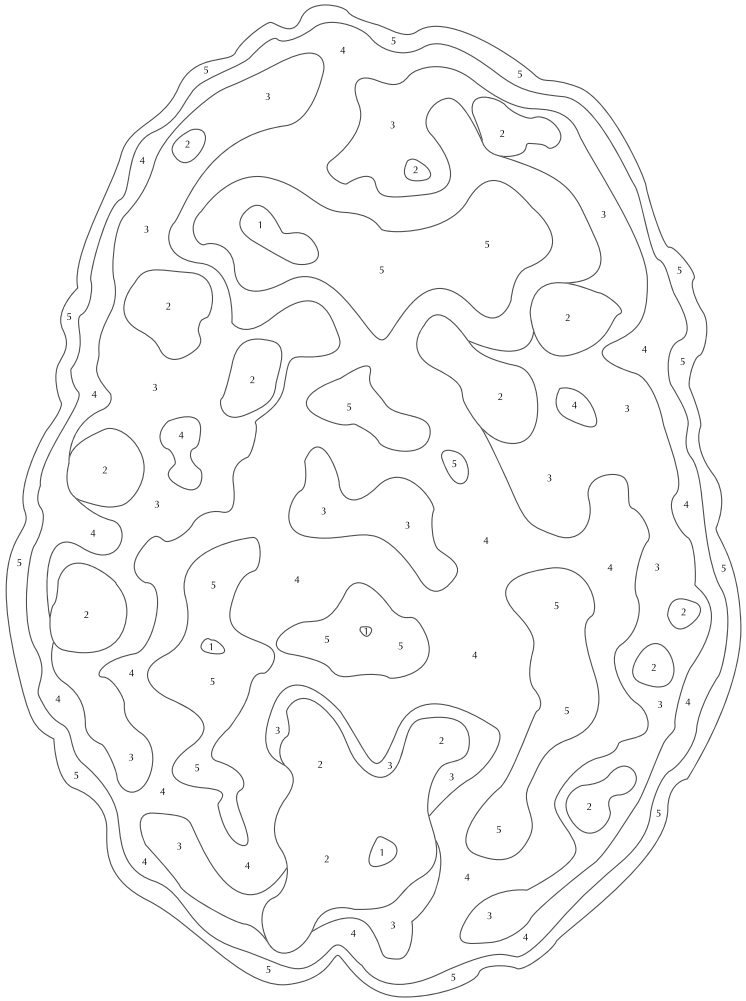
Name _____

Date _____

Use the morphing PET images on: *http://gslc.genetics.utah.edu/units/addiction/drugs* as a guide to color in the normal-functioning brain and brain of a cocaine addict below.



Normal-functioning Brain



Cocaine Addict