NEUROTRANSMITTERS INTERACTIVE
FINAL SCRIPT

Main idea:
Neurotransmitters are brain chemicals that control the action between nerve cells – and therefore they control everything our bodies do.

Visitor experience:
Users will experience the action as if they are inside the brain of the main character. Users will control the action by making choices at key points in the scenario, thus controlling brain function. At certain points, users can choose to find out more information about the role of a particular neurotransmitter via a pop-up box.

Learning objective:
Visitors will understand that brain chemicals control our emotions and actions based on the events (incoming stimuli) that we experience each moment of each day.

1.- INTERACTIVE VIDEO CHAPTERS

<table>
<thead>
<tr>
<th>BRAIN PANEL</th>
<th>MID SCREEN</th>
<th>BODY PANEL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NT.0 ATTRACT LOOP</strong>&lt;br&gt;PRESS ANY BUTTON TO BEGIN</td>
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</tr>
<tr>
<td><strong>NT.1A.1 INTRODUCTION</strong>&lt;br&gt;Ever wonder how your brain controls the way you feel?&lt;br&gt;Happy, sad, hungry or tired, it’s all because of changes in chemicals—called neurotransmitters—inside your brain.&lt;br&gt;Press the (book icon) button to find out more about highlighted terms.&lt;br&gt;Watch what happens when you make different choices.</td>
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<tr>
<td>Neurotransmitter levels will rise or drop…&lt;br&gt;IN THE BRAIN</td>
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<td></td>
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<tr>
<td>… and the brain will tell the body what to do.&lt;br&gt;Ready to try it?&lt;br&gt;A Yes, let’s start&lt;br&gt;B No, repeat video</td>
<td>IN THE BODY</td>
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</tbody>
</table>
### IN THE BRAIN

**NT 2A.1 SMELL**

Imagine you are relaxing and reading a book.

Many nerve cells are signaling each other in the brain.

*Mmmmm. I smell cookies baking.*

What should I do?
A Obey Mom and wait
B Get a cookie anyway

**IN THE BODY**

**SCENT** detected

**WANTING**

**STOMACH** growls

**CONFLICT**

**HEART RATE** speeds up

### IN THE BRAIN

**NT 3A.1 RESIST**

That was a tough choice!

I’ll play outside to forget about the cookie.

**IN THE BODY**

**FRUSTRATED**

**HEART RATE** speeds up

**BREATHING QUICKENS**
### NT 3B.1 GET COOKIE

**IN THE BRAIN**

- ALERT: “Go” signal activated
- DOPAMINE rises

Brain tells body to get the cookie.

**IN THE BODY**

- MOTIVATED
  - HEART RATE speeds up
  - STOMACH growls

*I can’t wait to taste that cookie!*

### NT 3B.2 WARNING

**IN THE BRAIN**

- ALERT: Memory activated
- STRESS HORMONES rise

Brain remembers warning from Mom.

**IN THE BODY**

- STRESS
  - HEART RATE speeds up
  - BREATHING quickens
  - PALMS sweat

*Don’t eat the cookies!*

Whoa! What now?
- A Turn back
- B Ignore warning
### NT 4A.1 TURN BACK

**IN THE BRAIN**

**ALERT:** “Stop” signal activated

Brain puts on the brakes.

**DOPAMINE** drops

**IN THE BODY**

**FRUSTRATED**

HEART RATE speeds up

BREATHING quickens

PALMS sweat

---

Mom won’t catch me, but still,

I’ll play outside to forget about the cookie.

---

### NT 4B.1 BUSTED

**IN THE BRAIN**

**DANGER!!**

**DOPAMINE** drops

**STRESS HORMONES** rise

**IN THE BODY**

**SCARED**

HEART RATE speeds up

BREATHING quickens

PALMS sweat

---

Mmmmm. *This cookie looks yummy!*

---

Oh no! I’m busted!

Uh oh! What do I do?

- A Run away!
- B Stay and apologize
<table>
<thead>
<tr>
<th>IN THE BRAIN</th>
<th><strong>NT 5A.1 GO PLAY</strong></th>
<th>IN THE BODY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brain senses body exercising.</td>
<td><strong>DOPAMINE</strong> and <strong>ENDORPHINS</strong> rise</td>
<td>HEART RATE speeds up</td>
</tr>
<tr>
<td></td>
<td></td>
<td>BREATHING quickens</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>HAPPY</strong></td>
</tr>
<tr>
<td></td>
<td><strong>This is fun!</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>You feel great!</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A Ask Mom for a cookie</td>
<td></td>
</tr>
<tr>
<td></td>
<td>B End game</td>
<td></td>
</tr>
</tbody>
</table>

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<thead>
<tr>
<th>IN THE BRAIN</th>
<th><strong>NT 6A.1 RUN AWAY</strong></th>
<th>IN THE BODY</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ENDORPHINS</strong> drop</td>
<td></td>
<td><strong>DISTRESS</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>HEART RATE speeds up</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PALMS sweat</td>
</tr>
<tr>
<td></td>
<td><strong>I got away, but Mom is mad. I’m going outside to relax.</strong></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IN THE BRAIN</th>
<th><strong>NT 6B.1 APOLOGIZE</strong></th>
<th>IN THE BODY</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>STRESS HORMONES</strong> drop</td>
<td></td>
<td><strong>RELIEF</strong></td>
</tr>
<tr>
<td><strong>OXYTOCIN</strong> and <strong>ENDORPHINS</strong> rise</td>
<td></td>
<td>HEART RATE slows</td>
</tr>
<tr>
<td></td>
<td></td>
<td>BREATHING slows</td>
</tr>
<tr>
<td></td>
<td><strong>I’m sorry, Mom.</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Your cookies are so good, I couldn’t resist!</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>It’s okay, as long as I can trust you next time.</strong></td>
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</tbody>
</table>
IN THE BRAIN

**Alert:** Reward activated

**(Endorphins, Dopamine and Oxytocin rise)**

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**NT 7A.1 MOM GIVES**

*I can have a cookie now?*

*Thanks, Mom. Yum!*

You are now happy!

A Play again

B End game

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IN THE BODY

SATISFIED
2. - POP-UP SCREENS

POP-UP NT

Neurotransmitters

Neurons communicate using chemical messengers called NEUROTRANSMITTERS. A neuron sends an electrical signal that triggers the release of a neurotransmitter. Like a lock and key, the chemical attaches to a special receptor on another neuron. The message is sent.

Some neurotransmitters tell the next neuron whether to fire or not, while others may influence how the neuron responds to other signals. The brain reacts in different ways depending on the neurotransmitter and the brain region signaled.

POP-UP_DOPAMINE

Dopamine, among other things, is a key messenger in the brain’s “seeking system,” which generates desire. When dopamine is released, it helps motivate you to find the things you need. Once you achieve your goal, dopamine is released again to strengthen the memory of what caused the good feeling.

POP-UP_ENDORPHINS

Endorphins are brain chemicals released by the pituitary gland, the hypothalamus and many other neurons throughout the brain to help reduce pain and stress. Endorphins also activate your pleasure centers when you accomplish a goal, when you exercise and even when you eat chocolate!

POP-UP_OCYTOCIN

Oxytocin plays a key role in the bonding process. New moms and people in love generally have high levels of this neurotransmitter in their brains. Scientists think that oxytocin may decrease during a period of separation but increase again during a reunion. Oxytocin is released by the pituitary gland.

POP-UP_STRESS

Stress hormones include cortisol and epinephrine. These brain chemicals are released when something makes you worried, angry or agitated. Their function is to get your body and mind ready to defend yourself if necessary, or to run away.