


# Imagineerz@School

## Module 3: Mission to Mars

### M3 Materials

8 Builders				2 Tools	1 Tester
Construction Paper	Jumbo Craft Sticks	Heavy Duty Aluminum Foil	Cut-Up Cereal Boxes or Thick Cardstock (5x7)	.94 in. Masking Tape	
					
3 oz. Dixie Cups	Bendy Straws	Twine	Paper Towel Rolls (Optional)	Scissors	Wiffle Balls
					

#### Total Materials Required

**Builders:** 20-30 Pieces Per Student

**Tools:** 1 Per 2-3 Students

**Testers:** 1 Per Student (M3L4 & M3L7)


Quantities on Amazon are based on one classroom of 20-24 students. **Please adjust quantities if ordering for more or fewer students.**

Remember to ask classroom parents for donations of cereal boxes and paper towel rolls!




[Click here to order materials on Amazon](#)


## M3 Lesson 1: *Signs of Life!*

 <p><b>Set Up</b></p>	<ul style="list-style-type: none"> <li>• Tech Ready: <ul style="list-style-type: none"> <li>a. Test speakers and TV/projector</li> <li>b. Connect computer to a power source</li> </ul> </li> <li>• Materials: <ul style="list-style-type: none"> <li>a. Cut aluminum foil into arm's length sheets.</li> <li>b. Lay out the materials: 6 builders and 3 tools.</li> </ul> </li> </ul> <p><b>Lesson Specific:</b> No additional set up</p>
<p><b>Tips</b></p>	<ul style="list-style-type: none"> <li>• During Ideation, if students start planning how (e.g. I'll use sticks to...), steer them back to idea generation (e.g. What are 5 other animals you can build?)</li> <li>• The room will get messy. Don't worry - it's a part of the creative process! We facilitate clean up during the last 10 minutes.</li> </ul> <p><b>Lesson Specific:</b> No additional tips</p>
<p><b>Level Up Questions</b></p>	<ul style="list-style-type: none"> <li>• How many more features can you add to your alien?</li> <li>• Your alien just adopted a pet! What does it look like?</li> </ul>


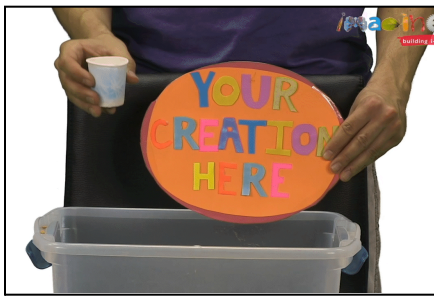
## M3 Lesson 2: *Rocket into Orbit*

 <p><b>Set Up</b></p>	<ul style="list-style-type: none"> <li>• Tech Ready: <ul style="list-style-type: none"> <li>a. Test speakers and TV/projector</li> <li>b. Connect computer to a power source</li> </ul> </li> <li>• Materials: <ul style="list-style-type: none"> <li>a. Cut aluminum foil into arm's length sheets.</li> <li>b. Lay out the materials: 6 builders and 3 tools.</li> </ul> </li> </ul> <p><b>Lesson Specific:</b></p> <ul style="list-style-type: none"> <li>• Have 18 in.. of string ready for each student to test with.</li> </ul>
<p><b>Tips</b></p>	<ul style="list-style-type: none"> <li>• During Ideation, if students start planning how (e.g. I'll use sticks to...), steer them back to idea generation (e.g. What are 5 other animals you can build?)</li> <li>• The room will get messy. Don't worry - it's a part of the creative process! We facilitate clean up during the last 10 minutes.</li> </ul> <p><b>Lesson Specific:</b></p> <ul style="list-style-type: none"> <li>• Distribute Wiffle balls after the building timer starts.</li> <li>• Sometimes students have issues connecting the spaceship to the string and their rockets fly away. Feel free to point out weak connections and ask students how they could improve them.</li> </ul>
<p><b>Level Up Questions</b></p>	<ul style="list-style-type: none"> <li>• What cool tools and accessories does your rocket have? A claw arm?</li> <li>• How can you make the rocket as comfortable as possible for the astronauts' journey?</li> </ul>


## M3 Lesson 3: *Space Helmet*

 <p><b>Set Up</b></p>	<ul style="list-style-type: none"> <li>• Tech Ready:             <ol style="list-style-type: none"> <li>a. Test speakers and TV/projector</li> <li>b. Connect computer to a power source</li> </ol> </li> <li>• Materials:             <ol style="list-style-type: none"> <li>a. Cut aluminum foil into arm's length sheets.</li> <li>b. Lay out the materials: 6 builders and 3 tools.</li> </ol> </li> </ul> <p><b>Lesson Specific:</b> No additional set up</p>
<p><b>Tips</b></p>	<ul style="list-style-type: none"> <li>• During Ideation, if students start planning how (e.g. I'll use sticks to...), steer them back to idea generation (e.g. What are 5 other animals you can build?)</li> <li>• The room will get messy. Don't worry - it's a part of the creative process! We facilitate clean up during the last 10 minutes.</li> </ul> <p><b>Lesson Specific:</b>  <ul style="list-style-type: none"> <li>• Remind students to ensure the helmet fits snugly.</li> </ul> </p>
<p><b>Level Up Questions</b></p>	<ul style="list-style-type: none"> <li>• How many more calming features can you add to your helmet?</li> <li>• How can you make your helmet look as cool as possible?</li> </ul>


## M3 Lesson 4: *Bio-Bubble*

 <p><b>Set Up</b></p>	<ul style="list-style-type: none"> <li>• Tech Ready:             <ol style="list-style-type: none"> <li>a. Test speakers and TV/projector</li> <li>b. Connect computer to a power source</li> </ol> </li> <li>• Materials:             <ol style="list-style-type: none"> <li>a. Cut aluminum foil into arm's length sheets.</li> <li>b. Lay out the materials: 6 builders and 3 tools.</li> </ol> </li> </ul> <p><b>Lesson Specific:</b></p> <ul style="list-style-type: none"> <li>• Lay out 4-5 bins (10-15 quarts each) with 2-3 pounds of raw beans each. Students will pour beans onto their creations to test whether they are "air-tight."</li> </ul> 
<p><b>Tips</b></p>	<ul style="list-style-type: none"> <li>• During Ideation, if students start planning how (e.g. I'll use sticks to...), steer them back to idea generation (e.g. What are 5 other animals you can build?)</li> <li>• The room will get messy. Don't worry - it's a part of the creative process! We facilitate clean up during the last 10 minutes.</li> </ul> <p><b>Lesson Specific:</b></p> <ul style="list-style-type: none"> <li>• Distribute Wiffle balls after the building timer starts.</li> <li>• Encourage students to ensure their bio-bubble is hermetically sealed.</li> <li>• Encourage students to remove all beads from inside their bio bubbles at the testing station to reduce mess.</li> </ul>
<p><b>Level Up Questions</b></p>	<ul style="list-style-type: none"> <li>• The captain has requested we add 3 secret entrances to the bio-bubble in the case of an emergency! Where will you put them?</li> <li>• What kinds of things can you add to the bio-bubble that the astronauts can do for fun when they're not working?</li> </ul>


## M3 Lesson 5: *Double Bubble*

 <p><b>Set Up</b></p>	<ul style="list-style-type: none"> <li>• Tech Ready:             <ol style="list-style-type: none"> <li>a. Test speakers and TV/projector</li> <li>b. Connect computer to a power source</li> </ol> </li> <li>• Materials:             <ol style="list-style-type: none"> <li>a. Cut aluminum foil into arm's length sheets.</li> <li>b. Lay out the materials: 6 builders and 3 tools.</li> </ol> </li> </ul> <p><b>Lesson Specific:</b> No additional set up</p>
<p><b>Tips</b></p>	<ul style="list-style-type: none"> <li>• During Ideation, if students start planning how (e.g. I'll use sticks to...), steer them back to idea generation (e.g. What are 5 other animals you can build?)</li> <li>• The room will get messy. Don't worry - it's a part of the creative process! We facilitate clean up during the last 10 minutes.</li> </ul> <p><b>Lesson Specific:</b> • Ensure students focus on creating a hermetically sealed pathway.</p>
<p><b>Level Up Questions</b></p>	<ul style="list-style-type: none"> <li>• How many bio bubbles can you build and connect with tunnels?</li> <li>• Don't forget escape hatches! Sometimes, the astronauts might need to exit a bio-bubble at a moment's notice! Where will yours go?</li> </ul>


## M3 Lesson 6: *What a Drag!*

 <p><b>Set Up</b></p>	<ul style="list-style-type: none"> <li>• Tech Ready: <ul style="list-style-type: none"> <li>a. Test speakers and TV/projector</li> <li>b. Connect computer to a power source</li> </ul> </li> <li>• Materials: <ul style="list-style-type: none"> <li>a. Cut aluminum foil into arm's length sheets.</li> <li>b. Lay out the materials: 6 builders and 3 tools.</li> </ul> </li> </ul> <p><b>Lesson Specific:</b></p> <ul style="list-style-type: none"> <li>• Prep your string by winding it around your forearm and elbow 20-25 times, creating a big loop, then cutting through one side of the loop.</li> </ul>
<p><b>Tips</b></p>	<ul style="list-style-type: none"> <li>• During Ideation, if students start planning how (e.g. I'll use sticks to...), steer them back to idea generation (e.g. What are 5 other animals you can build?)</li> <li>• The room will get messy. Don't worry - it's a part of the creative process! We facilitate clean up during the last 10 minutes.</li> </ul> <p><b>Lesson Specific:</b></p> <ul style="list-style-type: none"> <li>• Students are allowed to use the Dixie cup (landing capsule) upside down. If they struggle, ask them which side would be easier to land on and why. Help them realize it's easier for the cup to land on the top because of its wider base.</li> <li>• Remind students to make their parachute sturdy enough to withstand the descent.</li> </ul>
<p><b>Level Up Questions</b></p>	<ul style="list-style-type: none"> <li>• How can you level up your parachute? Will it have writing? What colors will you make it? Can you design a backpack to hold it in?</li> <li>• How can you make your parachute catch more drag to slow the fall of something heavy, like a water bottle?</li> </ul>


## M3 Lesson 7: *Calm Down, Amygdala!*

 <p><b>Set Up</b></p>	<ul style="list-style-type: none"> <li>• Tech Ready: <ul style="list-style-type: none"> <li>a. Test speakers and TV/projector</li> <li>b. Connect computer to a power source</li> </ul> </li> <li>• Materials: <ul style="list-style-type: none"> <li>a. Cut aluminum foil into arm's length sheets.</li> <li>b. Lay out the materials: 6 builders and 3 tools.</li> </ul> </li> </ul> <p><b>Lesson Specific:</b> No additional set up</p>
<p><b>Tips</b></p>	<ul style="list-style-type: none"> <li>• During Ideation, if students start planning how (e.g. I'll use sticks to...), steer them back to idea generation (e.g. What are 5 other animals you can build?)</li> <li>• The room will get messy. Don't worry - it's a part of the creative process! We facilitate clean up during the last 10 minutes.</li> </ul> <p><b>Lesson Specific:</b></p> <ul style="list-style-type: none"> <li>• Distribute Wiffle balls after the building timer starts.</li> <li>• Remind students to incorporate thrust into their game.</li> </ul>
<p><b>Level Up Questions</b></p>	<ul style="list-style-type: none"> <li>• How many games can you design?</li> <li>• If you could design a second, more solid prototype of your game, what would you change? Do it!</li> </ul>

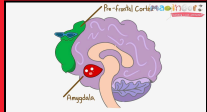
## M3 Lesson 8: *Exploring the Surface*

 <p><b>Set Up</b></p>	<ul style="list-style-type: none"> <li>• Tech Ready: <ul style="list-style-type: none"> <li>a. Test speakers and TV/projector</li> <li>b. Connect computer to a power source</li> </ul> </li> <li>• Materials: <ul style="list-style-type: none"> <li>a. Cut aluminum foil into arm's length sheets.</li> <li>b. Lay out the materials: 6 builders and 3 tools.</li> </ul> </li> </ul> <p><b>Lesson Specific:</b> No additional set up</p>
<p><b>Tips</b></p>	<ul style="list-style-type: none"> <li>• During Ideation, if students start planning how (e.g. I'll use sticks to...), steer them back to idea generation (e.g. What are 5 other animals you can build?)</li> <li>• The room will get messy. Don't worry - it's a part of the creative process! We facilitate clean up during the last 10 minutes.</li> </ul> <p><b>Lesson Specific:</b></p> <ul style="list-style-type: none"> <li>• Have students test their backpacks as they build, especially when they are making their straps.</li> </ul>
<p><b>Level Up Questions</b></p>	<ul style="list-style-type: none"> <li>• How many tools can you give the astronauts?</li> <li>• How fancy can you make your backpack? Can it hold and deploy a parachute?</li> </ul>

## M3 Lesson 9: *Martian Music Mania*

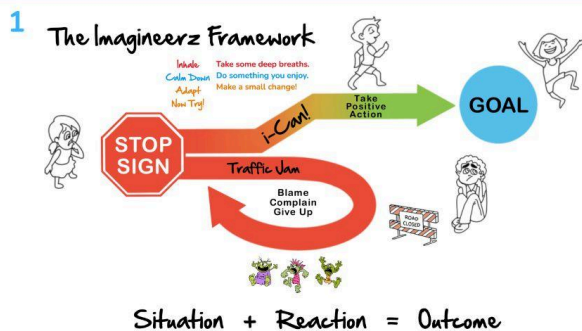
 <p><b>Set Up</b></p>	<ul style="list-style-type: none"> <li>• Tech Ready: <ul style="list-style-type: none"> <li>a. Test speakers and TV/projector</li> <li>b. Connect computer to a power source</li> </ul> </li> <li>• Materials: <ul style="list-style-type: none"> <li>a. Cut aluminum foil into arm's length sheets.</li> <li>b. Lay out the materials: 6 builders and 3 tools.</li> </ul> </li> </ul> <p><b>Lesson Specific:</b></p> <ul style="list-style-type: none"> <li>• Have a few sources, such as binder clips, ready for students to create noise with when the instrument is shaken.</li> </ul>
<p><b>Tips</b></p>	<ul style="list-style-type: none"> <li>• During Ideation, if students start planning how (e.g. I'll use sticks to...), steer them back to idea generation (e.g. What are 5 other animals you can build?)</li> <li>• The room will get messy. Don't worry - it's a part of the creative process! We facilitate clean up during the last 10 minutes.</li> </ul> <p><b>Lesson Specific:</b></p> <ul style="list-style-type: none"> <li>• Once all instruments are made, have students play their instruments together in a parade around the classroom.</li> </ul>
<p><b>Level Up Questions</b></p>	<ul style="list-style-type: none"> <li>• How many different instruments can you make?</li> <li>• How many classmates can you get together to make a band?</li> </ul>

## M3 Lesson 10: *Meet the Martians!*

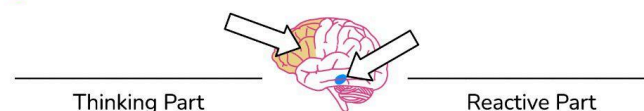
 <p><b>Set Up</b></p>	<ul style="list-style-type: none"> <li>• Tech Ready: <ul style="list-style-type: none"> <li>a. Test speakers and TV/projector</li> <li>b. Connect computer to a power source</li> </ul> </li> <li>• Materials: <ul style="list-style-type: none"> <li>a. Cut aluminum foil into arm's length sheets.</li> <li>b. Lay out the materials: 6 builders and 3 tools.</li> </ul> </li> </ul> <p><b>Lesson Specific:</b></p> <ul style="list-style-type: none"> <li>• <u>Print out one worksheet for each student.</u> Do not pass out worksheets, until instructed by video.</li> </ul>
<p><b>Tips</b></p>	<ul style="list-style-type: none"> <li>• During Ideation, if students start planning how (e.g. I'll use sticks to...), steer them back to idea generation (e.g. What are 5 other animals you can build?)</li> <li>• The room will get messy. Don't worry - it's a part of the creative process! We facilitate clean up during the last 10 minutes.</li> </ul> <p><b>Lesson Specific:</b></p> <ul style="list-style-type: none"> <li>• Encourage students to ensure their Martian has a visible amygdala and prefrontal cortex.</li> </ul>
<p><b>Level Up Questions</b></p>	<ul style="list-style-type: none"> <li>• What kinds of tools can you give your martian to deal with life on Earth?</li> <li>• How will your alien get to Earth? What kind of vehicle does it drive? Build it!</li> </ul>

## Appendix: M3 Lesson 10: Meet the Martians! ~ Summative Assessment Worksheet

Name: \_\_\_\_\_ Date: \_\_\_\_\_



### 3 Label the Parts of the Brain



### 4 Fill in the Blanks

ACA = Amygdala Calming \_\_\_\_\_

My ACA is \_\_\_\_\_

ACT = Amygdala Calming \_\_\_\_\_

My ACA is \_\_\_\_\_

### 2 The Imagineerz i-Can! Chant

Amygdala, \_\_\_\_\_,  
Don't give up or sigh.

Use the \_\_\_\_\_  
That'll get you by.

I \_\_\_\_\_, C \_\_\_\_\_,

A \_\_\_\_\_, N \_\_\_\_\_!

**5**  
I, \_\_\_\_\_, hereby certify that

\_\_\_\_\_ is officially a

**Level 5 Imagineer!**

## M3 Advanced Implementation

<b>Set Up</b>	<p><b>To avoid crowding:</b></p> <ul style="list-style-type: none"> <li>• Set up material boxes throughout the classroom</li> <li>• Release students in groups to get materials</li> </ul>
<b>Tips</b>	<ul style="list-style-type: none"> <li>• Encourage students to explore all the available materials before starting their prototypes. Remind them to consider the strengths and limitations of each material for their designs.</li> <li>• Emphasize the importance of creativity in using materials. Encourage students to think outside the box and consider unconventional uses for each item.</li> <li>• Award the magic scrap to a student who organized a materials box! Your materials will thank you.</li> </ul>