



## FIRST AID FOR THE FIRST MARTIAN

**Grade Levels 6-12**

### Activity

Students will be presented with various injuries Mark Watney may have suffered during the large dust storm that left him stranded on Mars. Students will learn how to treat these wounds and use actual first aid equipment to do so.

### Materials Required (per student)

Printed and cut first aid injury cards

<p><i>For stomach injury from antenna</i></p> <ul style="list-style-type: none"> <li>● Piece of cloth with a medium-sized hole cut into it to mimic the injury</li> <li>● Thread</li> <li>● Sewing needle</li> </ul>	<p><i>For knee injury</i></p> <ul style="list-style-type: none"> <li>● Rubbing alcohol</li> <li>● Gauze</li> <li>● Medical Tape</li> </ul>
<p><i>For shoulder injury</i></p> <ul style="list-style-type: none"> <li>● A large piece of cloth that can be folded into an arm sling</li> </ul>	<p><i>For sprained ankle</i></p> <ul style="list-style-type: none"> <li>● ACE bandage</li> </ul>
<p><i>For head injury</i></p> <ul style="list-style-type: none"> <li>● Rubbing alcohol</li> <li>● Gauze</li> <li>● Medical Tape</li> </ul>	<p><i>For broken finger</i></p> <ul style="list-style-type: none"> <li>● Tongue depressor/craft stick</li> <li>● Medical tape</li> </ul>

## Procedure

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For this activity, students will be posed with the following problem:

Oh no! A dust storm has hit you and your crew on the surface of Mars, forcing an immediate evacuation of the planet. During the evacuation, you are struck by an antenna that broke loose. The force of the impact pushes you away from your crew and damages your bio-monitor, leading your crewmates to believe you are dead. Your crew must evacuate, leaving you stranded on Mars. Your first task as a Martian is to get back to your habitat (the Hab) and patch up your injuries.

Before beginning, you will need to print First Aid Injury Cards. Each student should get at least one. The cards detail injuries that Mark Watney may have incurred during the dust storm. The cards also explain what the students will need to do to treat their injuries. Hand each student a card and give them time to dress their wounds on their own body. Students who get the stomach wound from the antenna should receive a piece of cloth with a hole cut into it (a few inches wide should suffice) that they will sew closed to mimic stitching a large wound.

Either separate the materials you need into individual boxes for each injury, or have a large supply of first aid equipment available for students to pick from. Once students have treated their injuries, have them come up to you to check that they have done an acceptable job.

## Teacher Extras

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### Optional Extensions

Have students demonstrate how they treated their specific injuries. You can also have them trade injury cards to practice treating various wounds.

Have students attempt to treat wounds on their own. After this attempt, students could research how EMTs would treat these wounds. With the additional information, students could re-dress their wounds and discuss how their ideas differed from standard practices.

You could also work with a school nurse, health teacher, or even your local EMTs to lead a first aid demonstration and help students assess and treat their injuries.

### Ask the Students

- What are the dangers facing Mark Watney if he does not treat his wounds properly?
- List other possible injuries Mark may have incurred and how he could have treated them.
- Why is it so important for Mark to carefully treat his wounds on Mars as opposed to Earth?
- Explain which one of these injuries would be the worst to have when stuck on Mars, and why.

When you return to the Hab, you must attend to the large gash on your stomach from being impaled by the flying antenna. The cut is large enough that you will need to give yourself stitches (in this case you will sew up a hole in a piece of cloth). Before beginning to stitch your injury, you cleaned the wound with a strong disinfectant, used tweezers to remove large particles from the wound, and disinfected the needle and thread. Now you must sew your injury closed.

As you were tossed around in the dust storm, you hit something that injured your shoulder. You don't think it is dislocated, but you still need to treat it. You decide to minimize the movement of your shoulder to prevent further injury by placing your arm in a sling. Find a way to use the large piece of cloth to create a sling that will hold your arm in place.

While you were being tossed in the dust storm, your head struck the inside of your helmet leaving a significant bruise and a shallow cut. The cut will not require stitches, but you still need to clean the wound thoroughly with rubbing alcohol, then cover it with gauze and medical tape to prevent infection. Unfortunately, there is not much you can do to help with the bruise.

While you were being tossed in the dust storm your knee struck the surface of Mars leaving a minor scrap beneath your space suit. A scraped knee is normally not a big deal, however you need to be very careful to avoid getting an infection while you are stuck on Mars. You have no means to treat an infection, so if you do contract one, it could turn deadly. You need to thoroughly clean the wound with rubbing alcohol, then cover it with gauze and medical tape to prevent infection.

Once you regain control and balance after being tossed in the storm, you realize that you need to get back to the Hab before your suit loses too much air. During your rush to the Hab, you sprain your ankle. Create a compression wrap around your ankle to immobilize and support the injury as well as to reduce swelling. Once your ankle is wrapped, you will need to apply ice and keep it elevated until it heals completely.

When you finally reach the Hab, you struggle to open the Hab door as the storm still rages. While trying to force open the door, you accidentally break one of your fingers. Use a tongue depressor and medical tape to create a splint that will stabilize your finger and help it heal. Eventually you will need to apply ice to help speed up the healing process.