

Pre field trip suggestions for Urban Heat Islands

Grades: Secondary

In this hands-on Discovery Lab students will explore the “heat island effect” as one contributing factors to global climate change. Students will work collaboratively to design cityscapes and evaluate their ability to minimize human impact on the environment.

Nevada Academic Content Standards in Science (NGSS): MS-ESS3-3, MS-ESS3-5

Common Core: 7.EE.B.

During the Discovery Lab students will be expected to:

- Sit in groups of 4 students per table.
- Work cooperatively with one another at the table.
- Follow the hands-on procedures just as the Lab teacher or assistant explains them.
- Handle materials and equipment carefully.

It is important that teachers and chaperones:

- Help focus the students’ attention.
- Assist students with lab activities through questioning allowing the student to do the actual data collection and decision making. For example a parent might ask, “I see your base is shaky, what could you do to strengthen it?”
- Engage students at a higher level by asking open-ended questions throughout the class. For example: why did you choose _____?
- Turn off cell phones and other electronic devices during the activity.

Literary connection:

To get students excited about the upcoming Discovery Lab we suggest reading experts from the following book with your students: *What’s Really Happening to Our Planet?* by Tony Juniper A passionate call to action by one of Britain’s most influential environmentalists, this work gives us a snapshot of the current state of our planet and a sense of what is to come if we do not change course.

The book is divided into three sections: primary causes of change, major consequences, and a glimpse at the future. Each subject area (for example, “Rise of Consumerism,” “The Greenhouse Effect,” “Nature’s Spaces”) is given a spread with a couple of paragraphs of text and bright graphs, charts, maps, and diagrams that illustrate key statistics. Some pages also feature color photographs. A glossary, index, and references (primarily online and quite recent) add great value to this sobering volume. Text boxes on a few pages headed “What Can We Do?” and

“What Can I Do?” offer practical suggestions to those who wish to take positive action, and help temper the overwhelmingly distressing nature of the facts presented.

