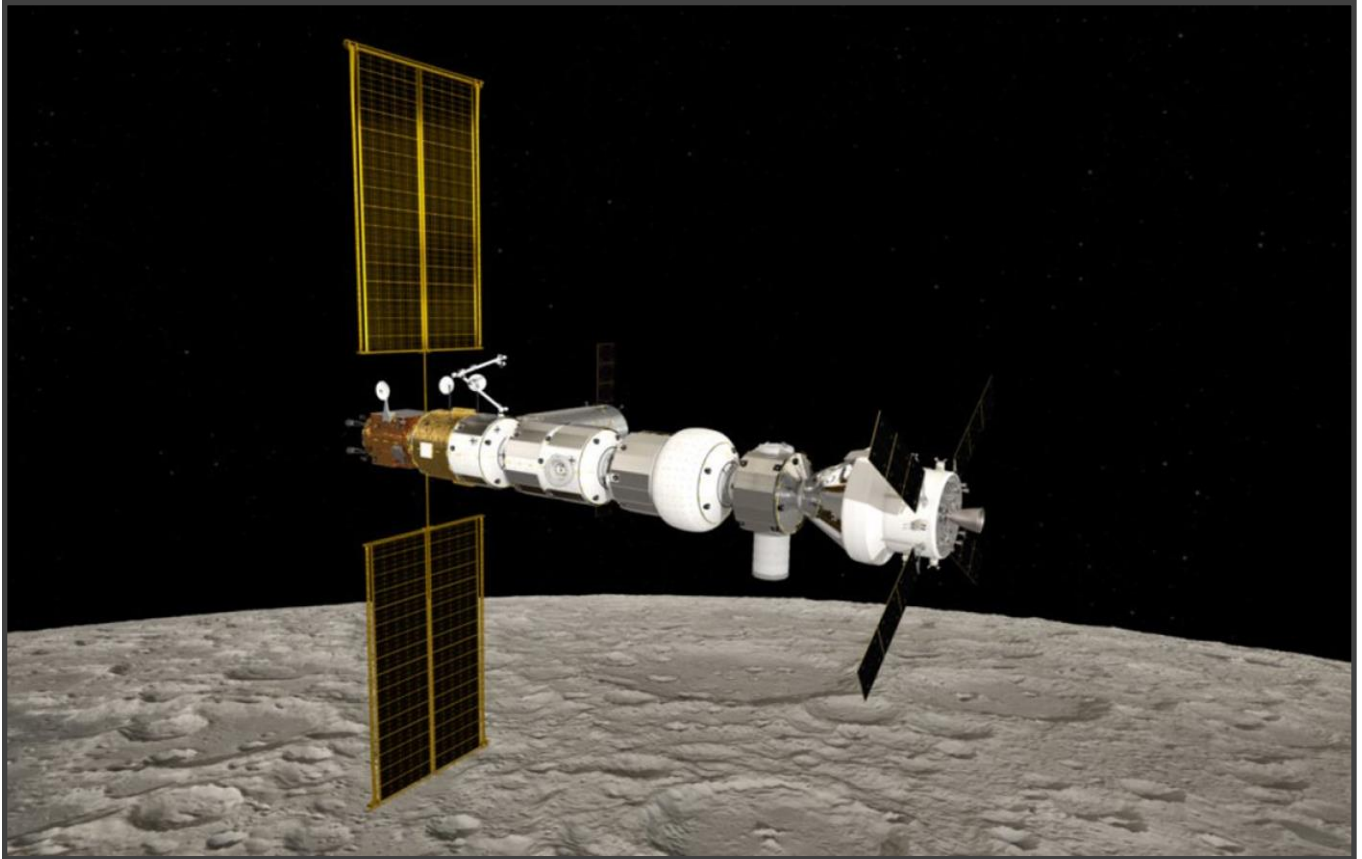


Spacegate Station Season 2

Episode 1 Resources



Resource Contents

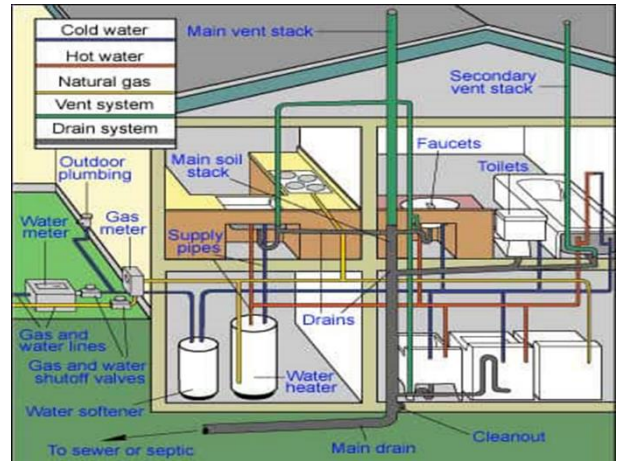
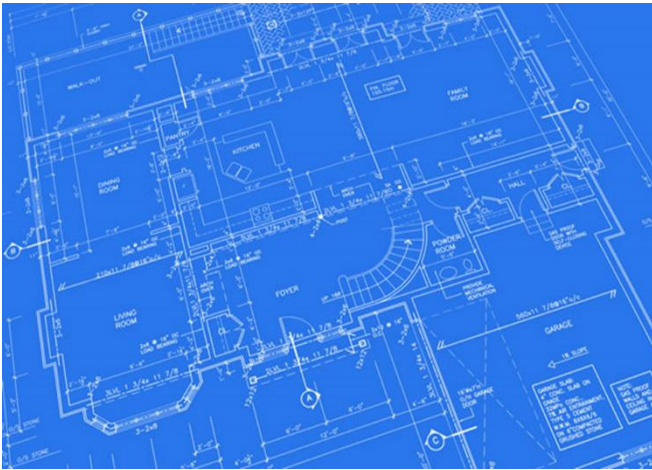
- Graphic Work Sheet
- Guided Notes
- Build Instructions
- Next Generation Sunshine State Standards (Florida)

This program was designed specifically to be used as part of science subject instruction, science remediation and science enrichment. The determination of the appropriate science standards that correlate to this program was established by a board of Science Specialists and teachers in Duval County Public Schools, Jacksonville, FL.

Spacegate Station S2 Episode 1 – Building the Future


Construction Design Work Sheet 1

Directions: Draw a line to the correct step to identify what it is.



Construction Design

- Step 1 – Pre-design phase
- Step 2 – Schematic design
- Step 3 – Design Development
- Step 4 - Construction Drawings

An illustration of two construction workers wearing yellow hard hats and white shirts, standing and looking at a large white blueprint. The background is dark, making the workers and the blueprint stand out.

Construction Design Work Sheet 2

Directions: Identify the correct construction design.

Word bank

Construction drawing

Contractors

Design development

Draftspersons

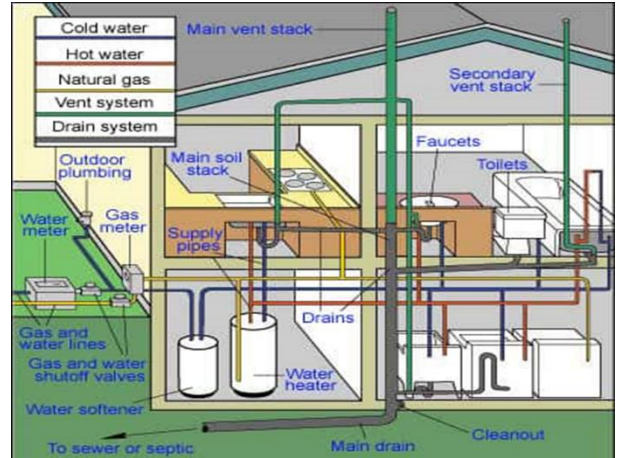
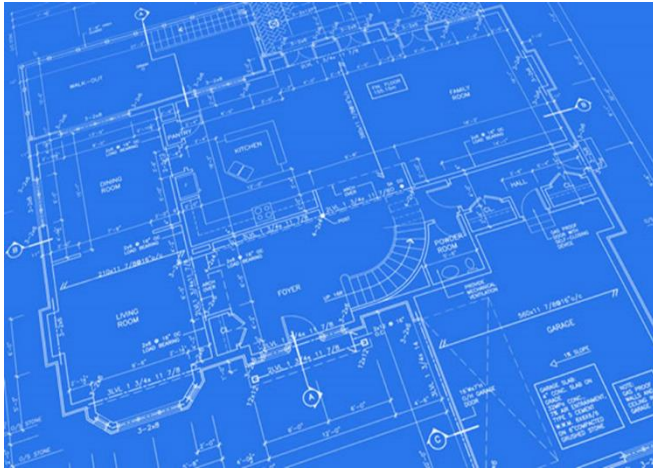
Electrical engineer

Interior designers

Mechanical engineer

Pre-design

Schematic design



1. _____

2. _____



3. _____

4. _____



5. _____



6. _____



7. _____



8. _____

Construction Design Guided Notes

Word bank

Building design	Construction drawing	Contractors	Design development
Draftspersons	Electrical engineer	Interior designers	Mechanical engineer
Pre-design	Schematic design		

The _____ phase of construction design is a step-by-step process that considers the goals and needs of what the space you are building is going to be used for. It also includes the environment that you will build in.

The _____ is the second step of the process and involves the schematic design. In this step you create a vision of what the structure will look like through drawings. Many times, a model of the structure is created to make it easier to see what it will look like.

The _____ is the third step is the design development process. In this step the designer adds more detailed information obtained from consultants and team members such as electrical, plumbing, or air ventilation system engineers.

The _____ is the fourth step is developing the construction drawings that are used by the builders to create structure and includes all the specific information necessary to complete it.

_____ refers to the broadly based architectural, engineering, and technical applications to the design of buildings.

All building projects also require the services of:

1. _____
2. _____
3. _____
4. _____
5. _____

Build Instructions

Directions

In this activity the students can work independently or in groups to construct a house. The location of the house is up to the discretion of the teacher, whether it is in another place on the earth or on a distant planet. Instruct the students to build their own very special house. Have them use their imagination to design rooms and make it unique because it is supposed to represent the home of their dreams.

Planning

Before construction, you may have the students draw out their design ideas using the attached blueprint paper or on graph paper.

Materials

- For construction of the house the instructor can use various materials to include:
- Cardboard or Card stock (scissors and tape)
- Drinking straws (when using straws pinch the mouth of the straws to make them smaller and stuff them into another straw's end).
- Straw connector kit
- Toothpicks (mini marshmallows, playdough or clay for connecting)

In addition, you will want the students to decorate the inside of their home, for this you can use such materials as:

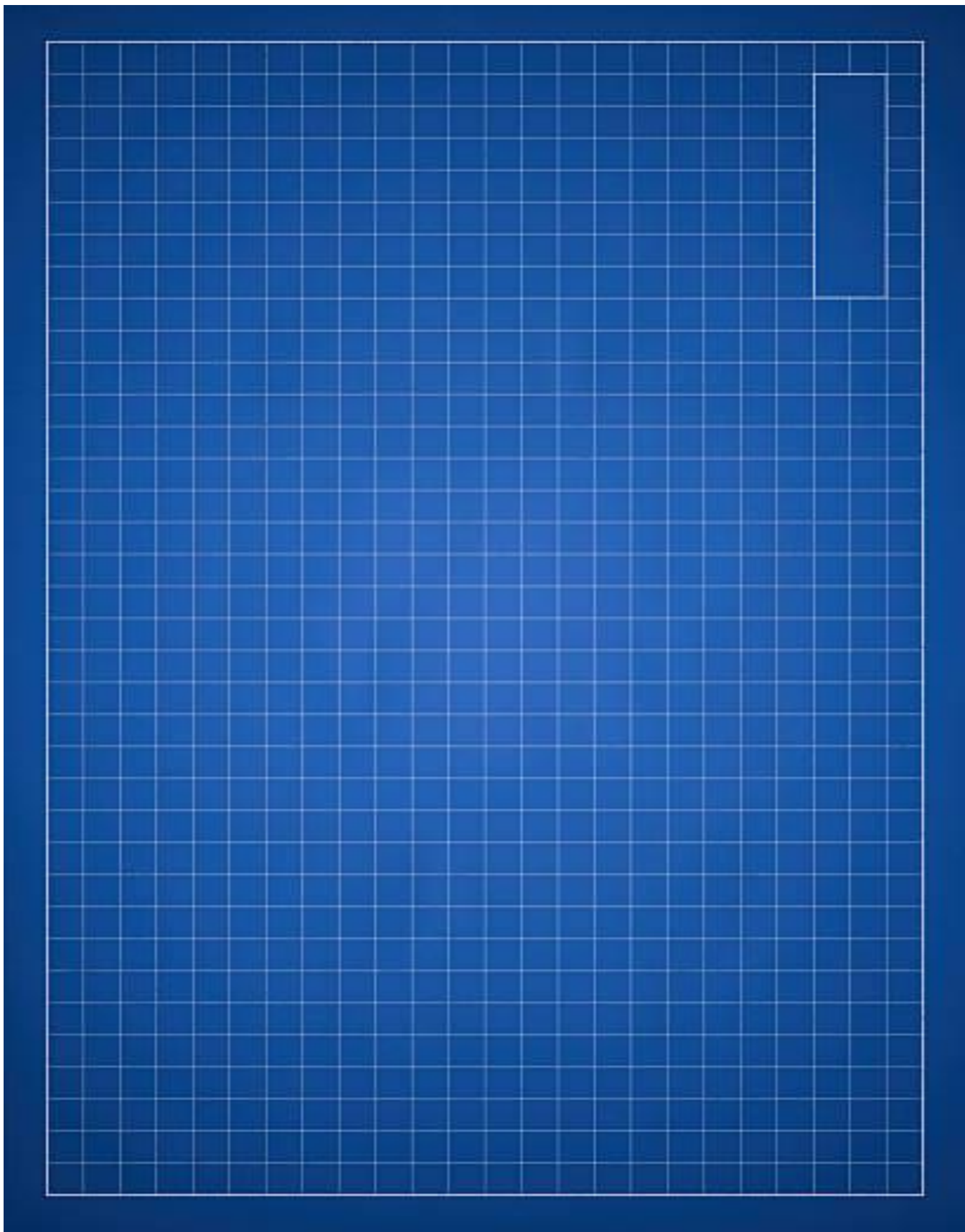
- Drawing paper
- Crayons or markers
- LEGO pieces
- Different colored clay or playdough

Construction

The construction activity can be from fifteen to thirty minutes depending on the age level of the students involved.

Activity Discussion

Upon completing the building process, have each student or group explain the various rooms in their house and what unique features they included and why.



Spacegate Station S2 Episode 1 – Building the Future

Next Generation Sunshine State Standards (Florida)

SC.4.N.1.2 Compare the observations made by different groups using multiple tools and seek reasons to explain the differences across groups.

SC.5.N.1.1 Define a problem, use appropriate reference materials to support scientific understanding, plan and carry out scientific investigations of various types such as: systematic observations, experiments requiring the identification of variables, collecting and organizing data, interpreting data in charts, tables, and graphics, analyze information, make predictions, and defend conclusions.

SC.6.N.1.1 Define a problem from the sixth grade curriculum, use appropriate reference materials to support scientific understanding, plan and carry out scientific investigation of various types, such as systematic observations or experiments, identify variables, collect and organize data, interpret data in charts, tables, and graphics, analyze information, make predictions, and defend conclusions.

SC.6.N.1.5 Recognize that science involves creativity, not just in designing experiments, but also in creating explanations that fit evidence.

SC.6.N.3.4 Identify the role of models in the context of the sixth grade science benchmarks.

SC.7.N.1.1 Define a problem from the seventh grade curriculum, use appropriate reference materials to support scientific understanding, plan and carry out scientific investigation of various types, such as systematic observations or experiments, identify variables, collect and organize data, interpret data in charts, tables, and graphics, analyze information, make predictions, and defend conclusions

SC.7.N.3.2 Identify the benefits and limitations of the use of scientific models.

SC.8.N.1.1 Define a problem from the eighth grade curriculum using appropriate reference materials to support scientific understanding, plan and carry out scientific investigations of various types, such as systematic observations or experiments, identify variables, collect and organize data, interpret data in charts, tables, and graphics, analyze information, make predictions, and defend conclusions.

SC.8.N.3.1 Select models useful in relating the results of their own investigations.