

Construction: BIM Technology

Volunteer Guide

This document provides a script and key talking points for volunteers guiding students through the Construction BIM Technology station.

Set up

Before Students Arrive

- **Laptop Access:** If locked out, use:

- **Email:** bim03@jastl.org
- **Password:** [JAacadbim33](#)

- **Project Initialization:**



- Click on the **3D** symbol to open the program.
- Double click on the **Junior Achievement Training Icon** to open the project.



- Make sure **3D** is clicked at the top of the screen.
- A 3D picture of **NEW OPS MIDDLE SCHOOL** should be visible on all laptops.
- **Grids:** If grids are showing, click the **Toggle grids icon** (on the bottom bar) to hide them.
- **Station Logistics:**
 - Set up two tables with five students per table.
 - If a student gets lost in the project, click the **Home Icon**  on the bottom bar.

You can expect improved performance from BIM software when the following tasks are implemented.

- The [home] button acts as a reset in between tasks.
 - As students navigate from task to task, please remind them to click the [home] button (lower right) between all activities.
 - Students should not navigate from room to room.
 - Students should work in a room then click on [3D] at the top of the page then click [home] to bring up the entire school on the screen. Click on the next room that they would like to work in.
- If you or the students are experiencing issues that cannot be resolved, X out of the program without powering down, then restart the program.
- Clear the cache on each computer at the end of the visit day and, if possible, in between student groups.
 - Go to [Project] in the upper left corner.
 - Click [Open].
 - Right click on [JA Trades].
 - Click [Clear Cache].
 - Click [Select data to clear].
 - Check [All].
 - Clear all data.

- At the end of the visit day after clearing the cache, download for field.
 - Go to [Project] in the upper left.
 - Click [Open].
 - Right click on [JA Trades].
 - Click [Download for field].
 - Close out (X out) at the end of the day but do not power down.

Introduction and BIM Overview

- Welcome students as they arrive.
- **Introduction:** "This experience will introduce you to BIM with the use of a Middle School design."
- **What is BIM?**
 - BIM stands for **Building Information Modeling**, or 3D modeling technology.
 - The construction industry uses BIM technology to plan and coordinate buildings and their systems (HVAC, plumbing, lighting, etc.) virtually, before building them physically.
 - Trade contractors (Plumbers, electricians, fire protection, structural engineers, etc.) use BIM to manage projects and ensure their work will be installed correctly.
 - BIM technology can be used on a computer, tablet, or smartphone.
 - BIM designers and coordinators have high-demand, well-paying jobs achieved through various career pathways.
- **Video Game Analogy:** "Who plays video games? This is the same type of gaming technology as a video game. Let's explore!"

Activity 1: Navigation and Trade Identification

- **Movement:** Use your mouse to "look" and the **W-A-S-D** keys on your keyboard to move:
 - **W:** Forward
 - **A:** Left
 - **S:** Backward
 - **D:** Right
- **Exploration Task:** Navigate around the screen and find some objects outside the building (locate the dump truck, the truck with the crane, the cement truck).

Using Viewpoints

Click on the **Viewpoints icon**  (upper left of your laptop). These are saved views within the model.

1. Click the arrow next to **Home Base**.
2. Click the arrow next to the **Junior Achievement folder**.
3. Click on **gymnasium**.
4. Ask the students: "What do you see?" (They should see a basketball player, scoreboard, bleachers, etc.)

- **Talking Point:** "BIM is all about the collaboration of different job roles in the construction industry in a virtual environment leading to more efficient project delivery."

Trade Job Assignment

Pass out one of the following trade jobs to each student:

- **Plumber:** Condensate pipes, roof drains, water line installation
- **Electrician:** Conduit electrical lines, all lighting systems, lighting fixtures
- **Fire Protection Contractor:** Fire protection sprinkler systems, alarms, extinguishing systems
- **Steelwork Contractor:** Structural, sheet metal workers, carpenter
- **HVAC Technicians:** Air duct installation, sheet metal, welding

First Activity: Find Your Trade Objects

1. Click **3D** at the top of the screen.
2. Click the **Rooms icon** (looks like a door).
3. Type **Instrumental 203** in the search bar.
4. (Have students find the objects that match their given trade).
5. **Color Coding:** Point out the colors associated with each trade (top left of the screen):
 - **Electrician:** Yellow
 - **Fire Protection Contractor:** Bright Red
 - **Plumber:** Gold
 - **HVAC Technician:** Blue Green
 - **Steelwork Contractor:** Darker Red
6. Have each student point out what they found.

Activity 2: Collaboration and Issue TrackingSecond Activity: Resolve Conflicts

- **Goal:** This activity is about collaboration between job roles. Students will enter a room, find a conflict, decide what job roles are involved, and then the two contractors will decide who would fix the issue first and why.

1. Have students click on "**Issue Tracker**".
2. Give students the following Issue ID numbers one at a time:
 - **12:** Electrician and HVAC Contractor
 - **72:** Plumber and Steelwork Contractor
 - **11:** Plumber and HVAC Contractor
 - **10:** Fire Protection Contractor and HVAC Contractor

Closing

- "We hope you enjoyed your experience today exploring the use of BIMtechnology!"