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# GETTING STARTED

## What is BlocksCAD for Education?

BlocksCAD for Education is a block-based 3D-modeling tool built for the classroom. It supports coding, math, and design thinking in a fun and easy browser-based environment (no install required). BlocksCAD is best for 3rd grade and up. With BlocksCAD for Education, you can access a library of access a library of BlocksCAD lesson plans & teacher resources, including common core aligned activities. These activities, along with educator created activities, can be assigned to students in the platform. As an educator you can view, comment, and edit student BlocksCAD code directly in the platform. You can also organize all student work for 3D printing.

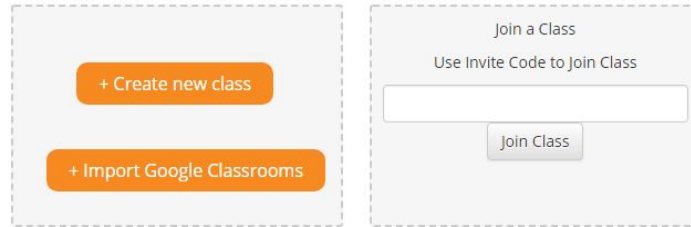
BlocksCAD for Education requires a paid individual teacher license or a school/district license. To access the Education features, first log in to [blockscad3d.com](https://blockscad3d.com) with your licensed teacher account. Click your username in the top-right corner, and a drop-down menu will appear. With several options. Select "My Classes".



To navigate to classroom features, first click your username in the upper right corner, and then "My Classes"

## MY CLASSES

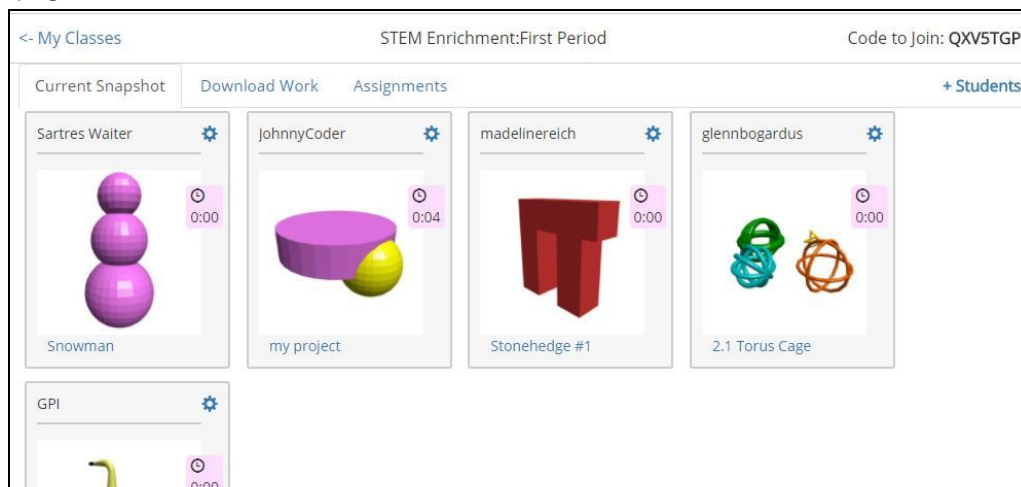
From here, you can create classes. If you integrate with Google Classroom you can begin with "+ Import Google Classrooms". If not, click "+ Create New Class", and give it a name, and (optionally) a section. Each class is created with a 7-character Student Access Code. Students join your class by going to their own "my classes" section from their accounts, and entering the 7-character Student Access Code into the **join a class** box. Students can log in from their own accounts (Google log-in supported). If your students do not have BlocksCAD accounts yet, you can quickly create their accounts and passwords yourself (see next page) and add them to your class.



The My Classes page. You may create new classes, join a class, or view your classes by clicking the class name. Students may join a class by typing in the 7-character Student Access Code associated with a class into their own “My Classes” page on their accounts.

## VIEW A CLASS

Once a class is created, you can click on the name of the class to view the contents of that class. The first screen you will see is the “Current Snapshot” of all the students in your class. The most recently saved project for each student (if any) is displayed in the student box. The Class Name is centered at the top of the page.



On the Current Snapshot page, the most recent project worked on by each student is visible.

## ADD STUDENTS

### For Students with Existing BlocksCAD Accounts

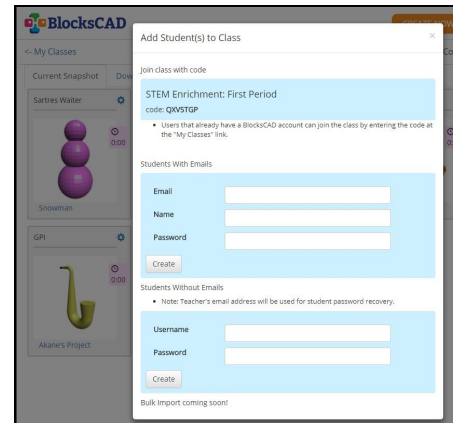
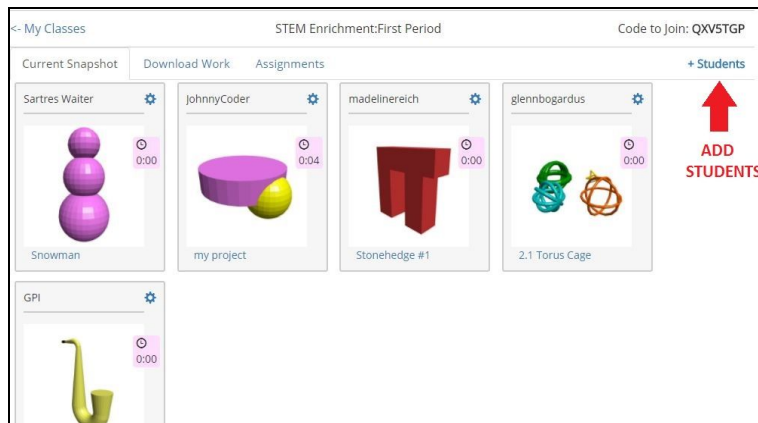
If your students already have BlocksCAD accounts, simply give them the 7-character Student Access Code associated with your class, and have them enter it into their own “Join a Class” option in their “my classes” tab.

### Create New Accounts for Students

#### Populate

For students who do not have BlocksCAD accounts already, you may decide to create their accounts for them and add them to your class. Click the “+ Students” option on the right side, and fill out the form which pops up. You can create students accounts with an email (which will become their

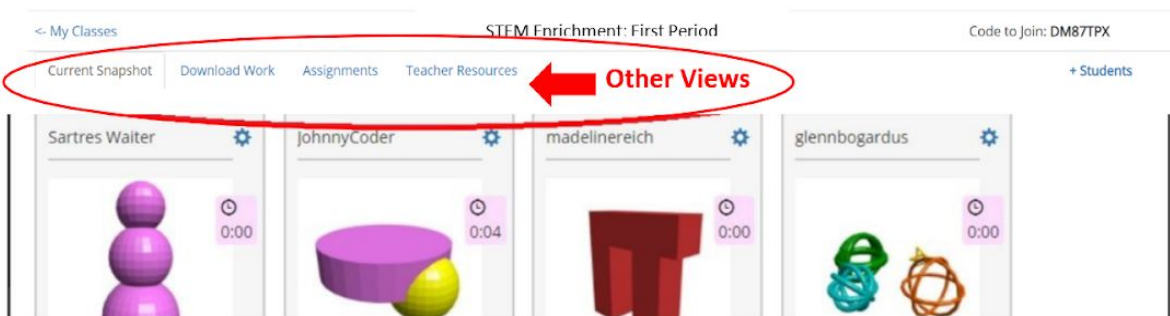
username). Or, for students without an email, you may create accounts with just a username and password.



[Left] Create accounts and add new students by clicking the + on the left side [Right] Fill out student information to create accounts.

## OTHER VIEWS

After clicking on a class, you will be taken to that class's main page. There are four tabs for viewing student information: **Current Snapshot**, **Download Work**, **Assignments**, and **Teacher Resources**. The different views can be selected by clicking tabs above your students' tiles.

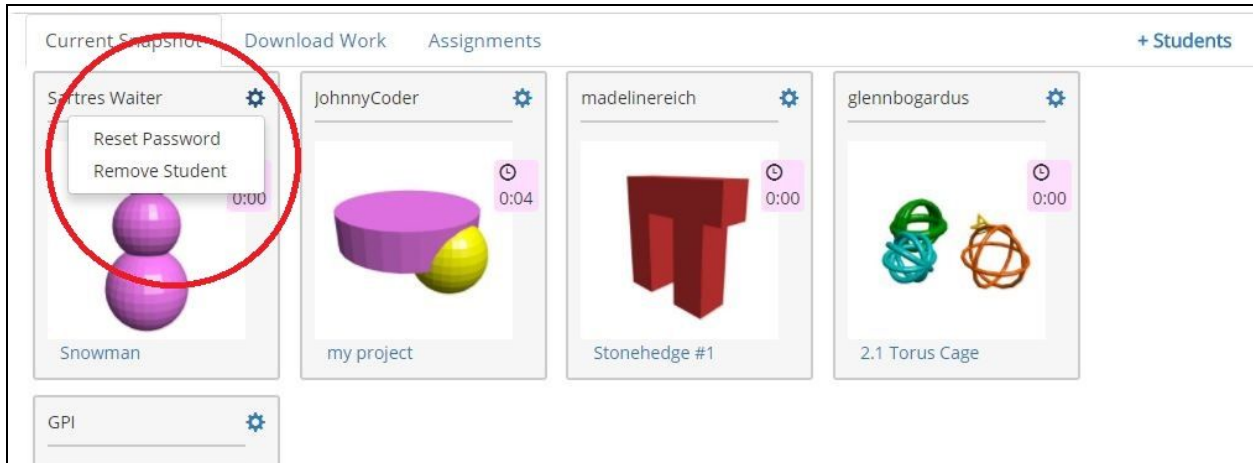


Access different views by clicking the tabs at the top of the page.

## CURRENT SNAPSHOT

This is the default view, first shown when you click on a class. This gives you a table of all your students. Their accounts will appear as tiles, with a picture of the most recent model they worked on (and the number of minutes they have worked on that project). This view is refreshed every few minutes (or anytime you refresh the page).

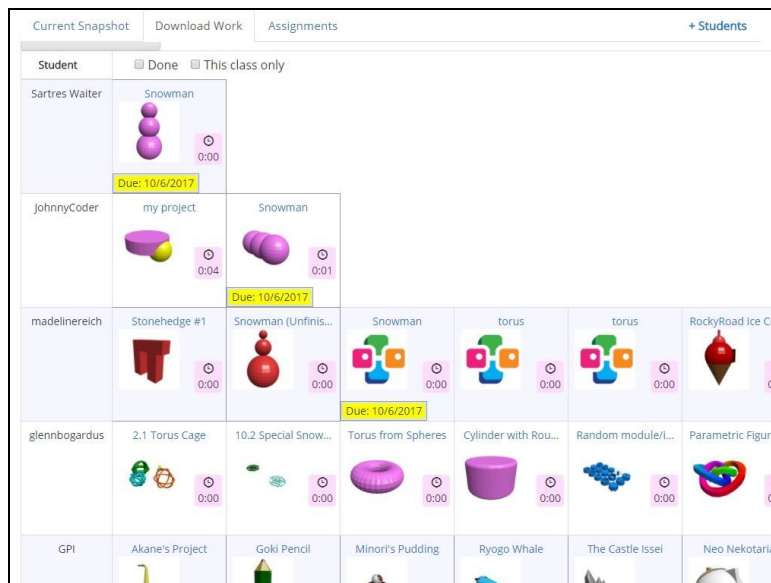
From the Current Snapshot, you can also "edit" a student by clicking the gear icon by their name. You can use this to **reset a student password**, or **remove them from the class**.



Click the gear icon to reset passwords, or remove students from a class.

## DOWNLOAD WORK

In this tab, you may view all the BlocksCAD projects your students have created. You may use this to browse their projects, view their code and make comments, or download STL files of their models for 3D printing.



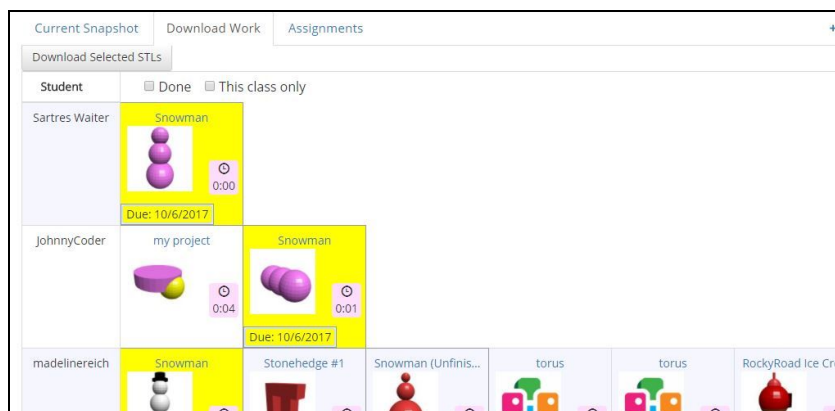
In the Download Work view, students are in rows, with all of their projects listed to the right of their username. The most recent project worked on is on the left. Older projects are on the right.

### Download STLs for 3D PRINTING

Click on a project image to **select** that project. The project tile will turn **YELLOW** when selected. Select all the projects you want to download, then click "**download STLs**" to save the STL files to your downloads folder. The files will be ungrouped (not in a zip folder), with the username of the student

appearing first, and then the project name. There will also be a text file called "print-notes" that lists all the filenames that you downloaded, as well as any printing notes your students may have added to their projects.

*NB: A project cannot be selected if it has not been rendered and then saved. You can tell if it has been rendered if a screenshot of the project appears in the tile (otherwise, the BlocksCAD logo appears). If a project has not been rendered, then click the project to open it, then click "Render" in the editor, then save the project.*

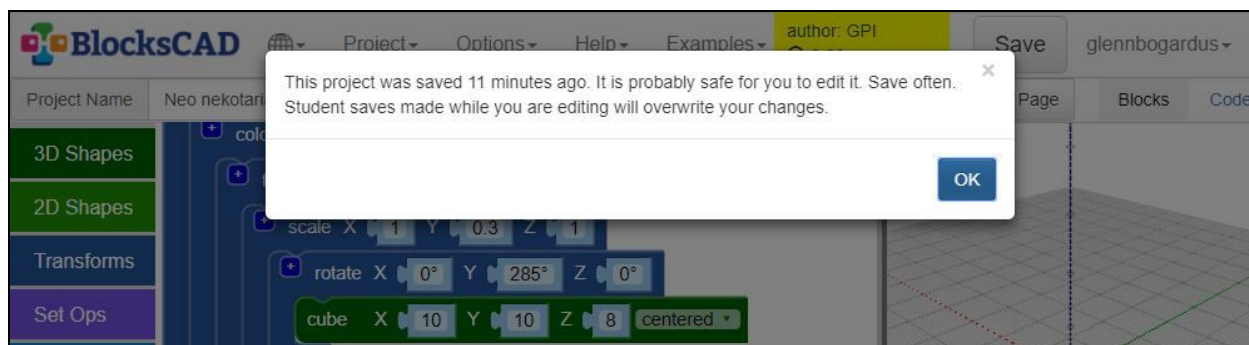


In the image above, the **YELLOW** highlighted assignments will be downloaded as STLs.

## Viewing and Editing Student Projects

You may also view, comment on, and edit student projects from the Download Work view. Click the name of the project to open the project in the BlocksCAD editor. **This will open the student's copy of the file, any changes you make the student will see.**

If you are editing a student project the same time as a student, any changes the student makes will overwrite your save. You will receive an alert when opening a student project that indicates how long it has been since they last worked on it. It is a good idea to wait at least 10 minutes after a student saves their work, so you can make comments or edits without your work being overridden. When editing a student project, save often.

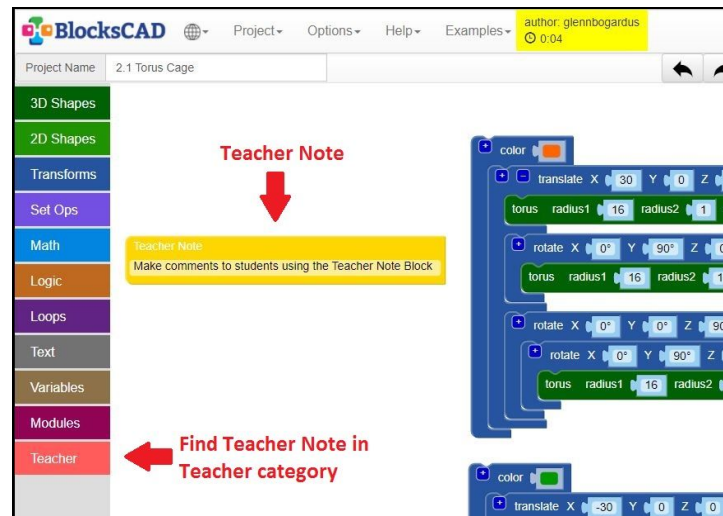


When editing a student project, a popup notification will tell you how long it has been since a student worked on that project.

## Making TEACHER NOTES in a Student Project

There is a new "teacher note" block, which can be accessed when editing a student project (as the teacher) through the Download Work tab. The block is found in the very last category on the left side of the editor, in the coral colored "Teacher" category. The note is bright yellow. The note block

If you need your own copy of a student's code for any reason, when you are editing the student code you can click Project->Save as a Copy, which will create a copy of the project in your own projects list (that you own, and the student cannot see).



The Teacher Note block is in the Teacher category, in the left-side menu. Only visible when editing student projects from your BlocksCAD teacher account. Students will see yellow "Teacher Note" block and text the next time they view their project.

## ASSIGNMENTS

In the assignments tab, you will find two categories of assignments: Our Intro Series build projects and our Math Series. The projects are arrayed in the "Available Projects" box.

### Intro Series

The Intro Series is intended to introduce BlocksCAD and early coding and design concepts. The lessons emphasize creative building projects and high student agency. The lessons can be sorted by content with the tags at the top of the Assignments menu. Each Intro Series build comes with three components.

- **Instructions** - A digital handout which goes to the students.
- **Teacher Notes** - with teaching notes about teaching the one-sheet, and where it fits in the sequence)
- **Example Solution** - takes you to a blockscad project with example code to make the object.

### Math Series

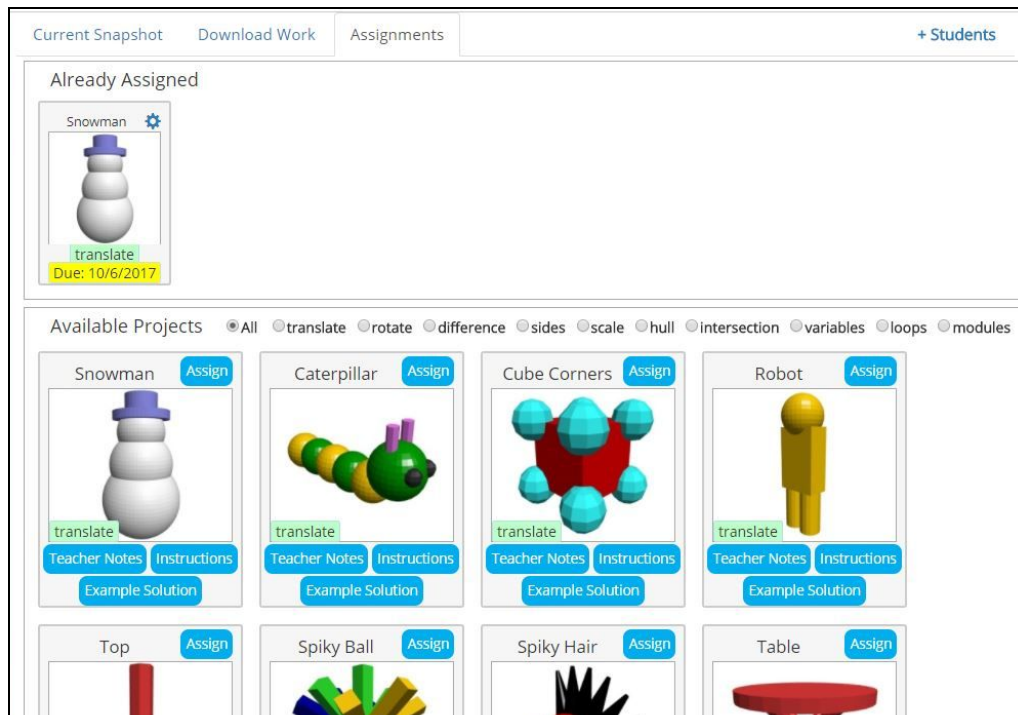
The Math Series lessons are longer student explorations that use BlocksCAD to teach specific Common Core Math Standards. Some projects involve building, while others have students manipulate existing blocks and programs in the software. Each Math Series build comes with three or four components:

- **Lesson Plan**- A document for teachers with standards alignment, lesson objectives, prerequisites, a detailed lesson walkthrough, and recommended extensions



- **Student Worksheet** - a student guide to the lesson with instructions, questions, and prompts
- **Student BlocksCAD File** - a file with blocks that students will begin the exploration with
- **Solution BlocksCAD File** - when needed, an example solution blocks for the teacher

You can assign either Intro Series or Math Series projects to the class by clicking the blue "Assign" button. You may also pick a due date (**optional**). Assigning a project will put the assignment in your student's class window, and will also add the project to his or her "my projects" list. Students can view the one-sheet **Instructions**, but cannot view the **Teacher Notes** or the **Example Solution**.



Teacher view of Assignments, showing Already Assigned projects (top) and Available Projects (bottom)



# CREATE A NEW ASSIGNMENT

You can create an assignment yourself.

**Title:** This is student facing

**Tags:** put a comma between tags

Tags we use :

all translate rotate difference sides scale

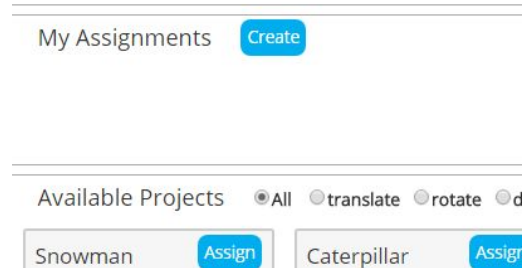
hull intersection variables loops modules

**Teacher Notes:** Only viewed by educator

**Image:** Will default to be a square image if it is not a square to begin with.

**Starting Blocks (.XML):** This is for students. You can download 'blocks' .XML file from your editor when making the assignment. If this is empty then it will load an new file as the 'starting blocks'.

**Example Solution (.XML):** This is available to the educator only



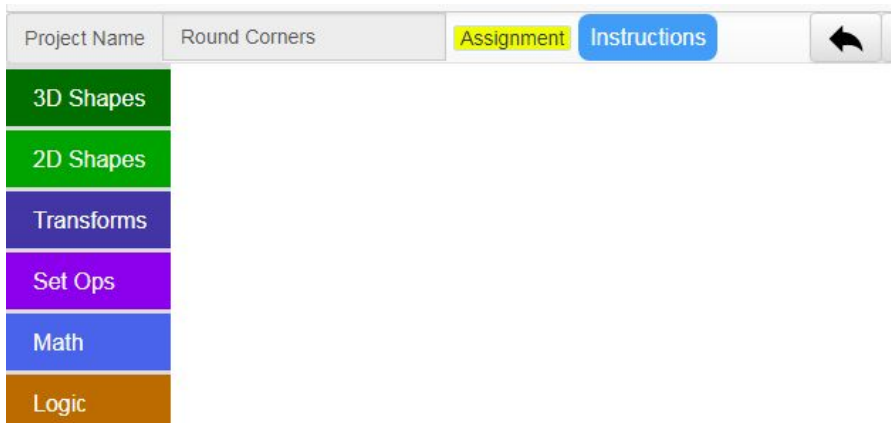
**Teacher View:**

**Student View**



**Instructions** open the PDF in a separate tab.

**Go to Project** will open starting .XML if that has been loaded. Otherwise it will open an new file. Either way, the instructions will also be available from the editor:



## TEACHER RESOURCES

The final tab from the Educator's view is a link to a page with compiled resources to help you and your students learn and master the software:

Teacher Resources	
BlocksCAD Manuals	+
Activity Worksheets	+
Videos	+
Block Images For Printing	+
Standards Alignment	+

You can find this manual as well as a basic BlocksCAD manual under the Manuals tab and you can quickly download all of our introductory builds under Activity Worksheets rather than navigating to each project page.

The Videos tab contains links to all of our introductory videos on Youtube for using particular BlocksCAD tools and the Block Images for Printing has printable versions of the blocks in our software.

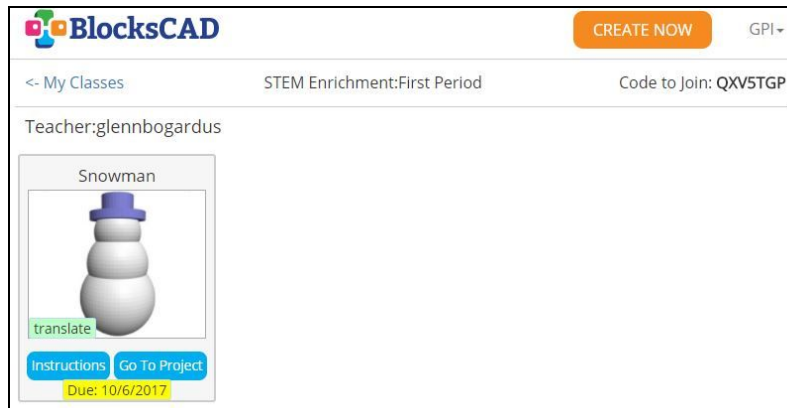
Finally, the Standards Alignment provides grade-specific alignment suggestions that builds on the alignment already integrated into specific Math Series activities.

## STUDENTS' VIEW

From the students' accounts, your assignments to them will appear in two places. They can be accessed from either the **My Classes** page, or the **My Projects** page.

### My Classes (student view)

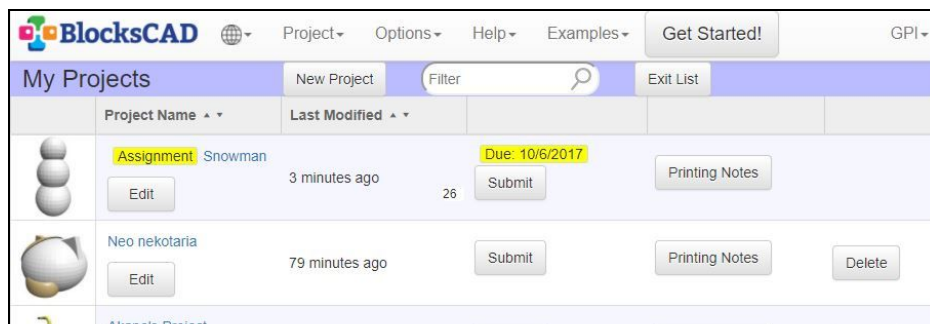
As with teacher accounts, students can find the "My Classes" page by clicking their username in the top right corner, and selecting "My Classes" from the drop-down menu. Once on that page, they can click on the names of their classes to view the assignments for that particular class.



Student view of Assignments, from the "My Classes" page.

## My Projects (student view)

Student can access the "My Projects" page by clicking their username in the top-right corner, and selecting "My Projects" from the drop-down menu (underneath "My Classes"). From the My Projects page, student have the option to **Submit** their project. A project which has been submitted will appear as "done" in your "student work" window. Students also have the option of including "printing notes", in which they can include information such as size or preferred color for their 3D prints. You will see the printing notes when you download students' models as STLs - the notes will be included with the STLs as a text file.



Student view of the My Project page, with assignments highlighted in yellow, and the Submit and Printing Notes options