

Advanced Design and Innovation Course Contract

The Advanced Design and Innovation Lab is for students who have excelled in the STEAM elective. The course provides students the opportunity to increase their skills in engineering design as well as a chance for students to explore their individual interests. The course requires students to be responsible, self-driven and creative. Students and parents please sign and upload a copy of the signed last page to Canvas.

Where do I go when I want to...

Find out about what you missed when you were absent or get directions for an assignment? Most of the work done in this class can only be completed in the Makerspaces. We have very little homework. If you are absent it is your responsibility to go to [Canvas](#) or ask a friend what was missed. **Please don't ask Mr. Lyons what you missed before checking Canvas and asking a classmate.** If you miss multiple days of a group project you will be required to complete the project on your own before school, after school or during lunch.

Learn how to work a piece of equipment: Check out the class [webpage](#). Note you are only permitted to use equipment after you have been trained and been given permission.

Ask Mr. Lyons a personal question about my grade, absence or assignment.

1. Ask Mr. Lyons before or after class.
2. Email Mr. Lyons (blyons@ttsd.k12.or.us). I will respond within 24hrs and try to always respond within 2 hours. **If you email me on Friday afternoon or Saturday you will need to wait until Sunday evening at the earliest for a response.**
3. Call Mr. Lyons' (503) 431 -5262

Turn in work: [Canvas](#)

Find your grades: [Student Vue/Synergy](#)

Class Structure

1. Enter class before the bell and sit in your assigned seat. If it is Monday, create huddle to discuss plans for the week.
2. Greet Mr. Lyons and other students.
3. Check for days agenda, goals (see below) and Do Now.
4. Projects and classroom work will be assigned. Projects require students to plan and create solutions to a design problem. Projects usually take 3-4 weeks to complete.
5. 5 minutes before the end of class Mr. Lyons will ring the chime for clean up. Clean up and return to your assigned seat.
6. Check that you have completed your daily goal.
7. At the end of class, wait at your seat to be dismissed. Students who have not completed clean up will need to stay until clean up is complete.
8. Say Goodbye to Mr. Lyons and your fellow classmates.

Goals

- *Daily Goal* - Students are required to have a goal for each day of class. Before 2 minutes have passed after the bell has rung students should have posted their daily goal on the class daily sheet in google classroom. Work may not begin until everyone has posted their daily goal.
- *Weekly Goal* - At the end of the week students must turn in a weekly progress journal. In this journal students must describe their progress during the week, they must provide evidence of each day of work and they must write a paragraph summarizing what went well and what did not go well during the week.

Computer Use

Each student will be assigned a computer. You may only use computers and iPads when permission is given to use them. Students are expected to use the computers according to Twality school rules. Assignments are given and submitted through Canvas. Students must sign in to their computer and use only their assigned computer. Students may store work on the computer but it is recommended that all work be backed up on Google Drive.

Computers are for classwork only. Playing video games is not allowed at any time. Youtube is only available with permission from Mr. Lyons.

Projects

Design Skills	Projects
Computer Assisted Design, Graphic Design	2D Design (Vinyl and Laser Cutters) 3D Design (3D Printers)
Rocketry	Bottle Rockets
Simple Machines	Mouse Trap Racers
Robotics	Lego EV3
Choice Projects	
Automotive Physics	CO2 Dragsters
Buoyancy and Physics of Boats	Cardboard Boat Races

Grading

100-90 - A
75-89 - B
0-74 - C

Projects = 65%
Group -> teacher (daily and overall), self, and peer evaluations]

Individual -> Each individual project has two versions (2 rockets, 2 3D objects, 2 2D objects). The first version should demonstrate that you can follow basic instructions. The second version is can you apply these basic instructions to create something new.

Daily Assignments = 25%
Quizzes = 10%

Twality Design and Engineering Behavior Contract

Based on our in class survey your fellow students have stated the following. These will be what guides how I mentor students and how students treat each other in the classroom.

The most effective teachers are the ones that :

1. Help
2. Teach
3. Communicate and give clear instructions
4. Care about each student
5. Listen
6. Frequently check for understanding

The most helpful students are the ones that

1. Help
2. Care
3. Are nice
4. Listen
5. Participate

In order to ensure that the classroom is safe and welcoming we need some basic rules. Here are the rules Mr. Lyons insist on:

- Sit in your assigned seat.
- Stay with your assigned group and stay in the classroom.
- Put away electronics. (Cell phones and ipads away unless permission is given by Mr. Lyons.)
- Raise your hand.
- Please do not speak while others are speaking, interrupt or shout across the room to your friends.
- Be safe. (No running, wrestling, pushing or hitting.)
- Use class supplies appropriately and minimize waste. Misuse/wasting class material (hot glue, tape, cardstock etc) will not be tolerated.
- Only use tools for which you have been trained and given permission.
- Clean up after yourself.

Makerspaces Safety

Probably more so than anywhere in the school is safe behavior essential than in the Makershop and Makerlab. Advanced students get direct access to the vinyl cutter, the 3D printers, powered saws, the drill press etc. . . This equipment is expensive and some of it potentially dangerous if not used properly. You must pass the training before using Makershop equipment. If you are found playing around with equipment or waisting class supplies it is an immediate referral and a call home to parents.