GEOTRICITY PROJECT

Robert Service Sr. PS
Grade 8

THE SCHEDULE:

Tuesday: Introduction, community walk

Wednesday Morning: brainstorm, create design
Wednesday Afternoon: have design approved, start on scale model

Thursday Morning: finish building scale model
Thursday Afternoon: finishing touches, present your designs and models to judges

On Wednesday and Thursday you will be working on this project ALL DAY, attendance will be done in the Cafe. Please sit with your classes when you arrive in the morning and after lunch to make this process easier.

PHASE 1: Wednesday Morning

BRAINSTORM

- Work with your team to create a list of as many possibilities as you can
- Use the provided planner and guiding questions to narrow down your ideas to 1-2 possibilities and start to focus on the specifics
- Choose your best idea and begin planning
- Create a scale triangle of the space on grid paper.

SITE VISIT

- Visit the space your design will need to fit
- Take measurements of all sides, angles and interior areas that you plan to work with
- Sketch the space and label with measurements
- Photograph (WITH PERMISSION ONLY!) the space to refer back to during planning

PHASE 1: Wednesday Morning

Creating a Scale Triangle:

You will be measuring the project space and then will need to represent it as a triangle. To do this you must scale the actual measurements down so that you create a triangle that will fit on 27.94 x 43.18cm grid paper.

Consider dividing the actual dimensions of the space by multiples of 10 to make calculation easier.

Once you determine your scale you will create the triangle on your grid paper and submit it. This triangle will become the base of your model, and you will use the scale you've created to plan out the measurements for your model.

PHASE 2: WEDNESDAY AFTERNOON

Create a finalized design and submit it for approval

- Consider the size of the available space and the project you've chosen, then determine an appropriate "real-life" size for your project
- Use the same scale used for your triangle to scale these measurements down and represent the size of your project model.
- Sketch your project, making sure it is to the correct scale - Be sure to measure!
- INCLUDE ALL MEASUREMENTS, as well as the proposed materials for each part of your model as you will be using these for Phase 3
- Think about the building materials you would like to use to construct your scale model - you will need to submit a list of 3 "must-haves" and 3 "nice to haves" as well as some rough idea of quantity when you have your design approved.

PHASE 3: Thursday Morning

You will have the full morning to construct your model. You will have access to the same tools we used during the Fluids Build project, as well as a similar selection of materials (wood, wheels, gears, string, glue, etc.) as well as donated recycled materials. You may bring materials from home, $5 maximum.

TOOLS AND MATERIALS ARE AVAILABLE ON A FIRST COME, FIRST SERVED BASIS.
WHEN YOU PLAN YOUR MODEL REMEMBER THAT YOU WILL ONLY HAVE 2.5 HOURS TO COMPLETE THIS BUILD!!

Work stations will be set up in the Science lab, cafeteria and library, however we have limited numbers of tools so plan your build accordingly. You will NOT be allowed to keep any tools for the full build period, sharing will be required.

PHASE 4: Thursday Afternoon

Present your finished models and designs to staff, students, community members and judges

We will wrap up the project with a gallery walk that allows everyone here at Service as well as people from the community to see your ideas and vote on their favourite designs.

You will get a chance to look at other teams' work, but someone from each group will have to stay with your model (take turns please!) to answer questions and sell your idea - be prepared to be enthusiastic and persuasive!

Once voting is completed the top designs will be announced and the winning projects will be submitted for consideration, there is a possibility that one of your ideas may be realized in the future!

SUCCESS CRITERIA

A successful project will:

- Include correct measurements of the sides and angles anywhere that they are used (planner, diagram, model)
- Scale triangle with correct angles and side lengths has been submitted
- Well thought out design plan that uses the space in a way that will benefit the community
- Carefully constructed design diagram with all measurements and angles correct and to scale
- Clear justification of the selected design that fully explains the benefits and possible drawbacks of the project you have chosen
- Carefully constructed model built with precision and accurate measurements and angles

CATEGORY	CRITERIA	EX	4	3	2	1	R
MEASUREMENTS OF SPACE	Measuring tools have been used correctly All side lengths and angles are measured correctly Process for determining side lengths and angles is fully explained, mathematically correct	10	4 4 8	3 3 7	2 2 6	1 1 5	0 0 3
CREATION OF SCALE TRIANGLE	A reasonable scale has been selected Scale calculation steps have been applied correctly Scale calculations are correct Triangle has been constructed accurately Triangle measurements and angles are correct		6 4 4 4 4	5 3 3 3 3	4 2 2 2 2	3 1 1 1 1	0 0 0 0 0
FINAL DESIGN DIAGRAM	Diagram has been constructed with care (includes a variety of polygons) Measurements are accurate Angles are accurate Appropriate level of detail included	5 5	4 4 4 4	3 3 3 3	2 2 2 2	1 1 1 1	0 0 0 0
FINAL DESIGN PLANNER	Design is thoroughly described using geometry vocabulary. Reasons/justification of selected design are logical Potential problems and proposed solutions are well well-explained and thoughtful Justification of scale makes sense, well explained Thoughtful selection of materials	5 5 5 5 5	4 4 4 4 4	3 3 3 3 3	2 2 2 2 2	1 1 1 1 1	0 0 0 0 0 0
SCALE MODEL OF PROJECT	Model is constructed precisely and to scale All measurements and angles are correct Materials have been used appropriately and with care Presentation of completed project is well planned, fully explained and reflects thought	5	4 4 4 4	3 3 3 3	2 2 2 2	1 1 1 1	0 0 0 0
	TOTAL MARK (OUT OF 100)						

TEAM SELECTION

You may choose your own teams, maximum group size is 5 people. You may work with students from other core classes. When you have chosen a group come and register your team with the teachers.

TEACHERS RESERVE THE RIGHT TO ALTER GROUPS AS NEEDED

AGENDA: WEDNESDAY APRIL 1st

8:45-9:00
- entry and attendance by class in cafeteria

9:00-9:15
- Agenda

9:15-9:45
- introduction to culminating task and all criteria

9:45-10:15
- rotations to view the community space

10:15-11:35
- Phase 1 of task

12:45-1:15
- attendance and review agenda

1:15-2:55
- phase 2 of task

2:55-3:13
- summarize/review the day

AGENDA: THURSDAY APRIL 2nd

8:45-9:00

- entry and attendance by class in cafeteria

9:00-9:15

- Agenda

9:15-9:45

- Review of timelines/success criteria

9:45-11:35

- Phase 3 of task

12:45-1:45

- attendance and review agenda
- finishing touches for phase 3 and Gallery Walk prep

1:45-2:45

- Gallery Walk

2:45-3:10

- summarize/review the day
- announce winners
- clean-up