TOPSTON FITNESS TRAIL

Name:

Class:

Date submitted:

Copyright Maryland Public Television 2009, Local Service Initiative

*Topston has decided it needs to help its citizens become more physically fit.*

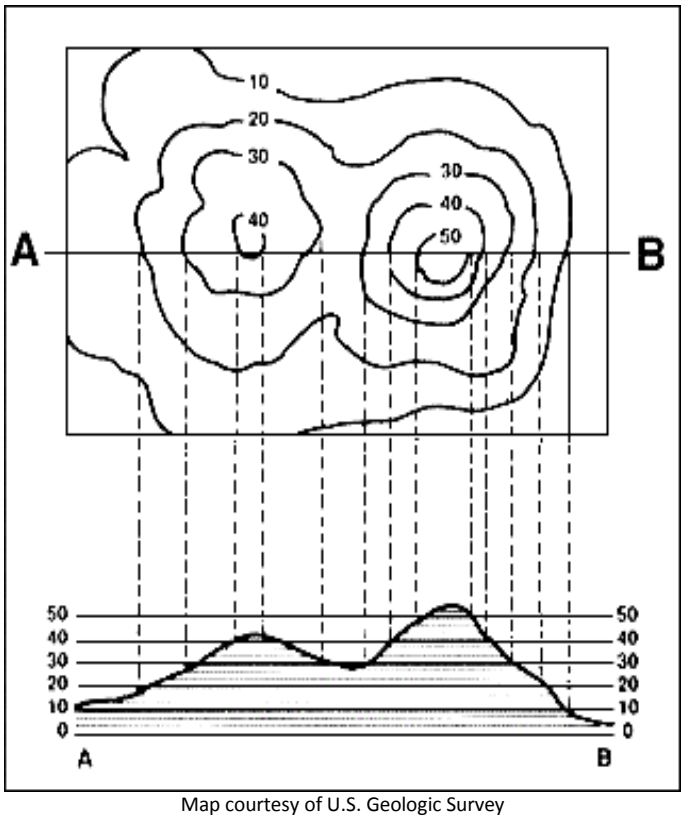
*The city council wants to build a fitness trail, or parcours, in a nearby park. They've asked TRC to handle the project, and, as luck would have it, Cornelius Makingwork has put you in charge of handling EVERYTHING.*

*This guide will help you make the big decisions, but it is only a guide. Your ideas and creative thinking are what will really make this project come alive.*

Copyright Maryland Public Television 2009, Local Service Initiative

SOME PROJECT DETAILS

- This is a map of the area where the fitness trail is going to be built. Its scale is one inch = 1 mile. It is a topographic map that shows the contours of the land involved. Just in case it displays differently on your computer, the map is 2 inches wide by 1-1/2 inches long.




Map courtesy of U.S. Geologic Survey
http://egsc.usgs.gov/isb/pubs/teachers-packets/mapshow/activity4.html

- The terrain in the area is not developed. You can think of it as having a dirt surface with some grassy areas.
- A fitness trail is an outdoor path with physical obstacles and challenge stations.
- The trail has to be accessible to people with all different kinds of physical fitness. There have to be activities for active and less active people.

Copyright Maryland Public Television 2009, Local Service Initiative

Here's a chart that describes the population of Topston. The town's population is 25,000.

| Age | Percent of population | | Percentage of population considered in Excellent physical shape | Percentage of population considered in Good physical shape | Percentage of population considered in Fair physical shape | Percentage of population considered in Poor physical shape |
|---|---|---|---|---|---|---|
| 10 and under | 5 | | 55 | 20 | 25 | 5 |
| 11 - 20 | 10 | | 40 | 30 | 20 | 10 |
| 21 – 30 | 10 | | 30 | 30 | 20 | 20 |
| 31 - 40 | 16 | | 36 | 34 | 20 | 10 |
| 41 - 50 | 20 | | 30 | 20 | 35 | 15 |
| 51 - 60 | 19 | | 25 | 25 | 30 | 20 |
| 61 - 70 | 10 | | 20 | 28 | 40 | 12 |
| 71 - 80 | 8 | | 0 | 15 | 60 | 25 |
| 81 – 90 | 2 | | 0 | 0 | 70 | 30 |
| Over 90 | 0 | | - | - | - | - |

- You have a project budget of $50,000.00. That must cover your salary of $25.00 per hour as well as equipment.

Copyright Maryland Public Television 2009, Local Service Initiative 

Right now, you probably have lots of questions. And that is a good thing.

Questions are an important part of a process that all architects, engineers, and other creative thinkers everywhere use in tackling and solving problems.

This process is called the engineering design process. It involves these parts, which people follow in any order that seems important to them.

**Question**
What kind of a problem am I facing? What do I need to do? What are my limits?

**Gather information**
What do I need top do to meet the problem? Have others had a similar problem? What have they done?

**Brainstorm solutions**
What are some solutions to the problem? Which are the ones that might work? Which seems best?

**Pick a solution and plan**
What does your solution look like on paper? What kinds of materials do you need for your solution?

**Try it out**
Build a model of your project. How does it work? Does it do what it needs to do?

**Improve your solution**
What works in your solution? What doesn't? How could you make it better?

This workbook will help you work through this process. You can follow the parts of the design process in any order that makes sense to you.

Copyright Maryland Public Television 2009, Local Service Initiative 

**Question**

Here are some questions you might have at this point in the project. Check the ones you need to answer … or write some of your own.

- ☐ How does a topographic map "work?"
- ☐ How much area are we talking about?
- ☐ How can I work with the elevation issue?
- ☐ What's a fitness trail?
- ☐ What does a fitness trail look like?
- ☐ What kind of equipment can I use?
- ☐ How much does fitness equipment cost?
- ☐ Who will use the park? What are they like?
- ☐ What do active, physically fit people need?
- ☐ What do less active people need?

☐ _____

☐ _____

☐ _____

☐ _____

☐ _____

☐ _____

☐ _____

☐ _____

☐ _____

Copyright Maryland Public Television 2009, Local Service Initiative 

**Gather information**

Using your questions as a guide, explore the internet and related print resources to find the answers to your questions. You can use the form on the next page to record the answers you find. You can also use the back of the page.

Some useful web resources

All about fitness trails, including sources for equipment

http://en.wikipedia.org/wiki/Fitness_trail
http://www.ccac.edu/default.aspx?id=146818 (all about Western Pennsylvania's CCAC outdoors fitness trail)
http://daviswiki.org/Fitness_Trails
http://www.nassausports.org/health-education/pages/fitness-trail/ (all about Nassau County, NY's fitness trails)
http://fitness.suite101.com/article.cfm/outdoor_fitness_workouts
http://www.waymarking.com/cat/details.aspx?f=1&guid=521d263d-4b3c-48aa-a7d5-aaf66b8e4fdc (a global list of many fitness trails in the US and beyond)
http://www.washingtonparkour.com/Parkour/parcours/purdue.htm

Exercises and fitness

http://www.fitness.gov/ (The President's Council on Physical Fitness and Sports)
http://www.fitness.gov/ (The Mayo Clinic's chart of exercise and calorie consumption)

Topographic maps

http://adventure.howstuffworks.com/how-to-read-a-topographic-map.htm
http://egsc.usgs.gov/isb/pubs/teachers-packets/mapshow/activity4.pdf

Fitness trail equipment

http://www.fittrail.com/
http://www.timberform.com/fit_1.html
http://www.outdoor-fitness.com/
http://www.davidwilliamsassociates.com/parcourse.asp
http://www.triactiveamerica.com/products.php
http://www.fitnesstrails.com/australia/advice_to_councils_and_schools.htm (this Australian site gives equipment costs)

Copyright Maryland Public Television 2009, Local Service Initiative 

My question: -

The answer I found:

My question: -

The answer I found:

My question: -

The answer I found:

My question: -

The answer I found:

My question: -

The answer I found:

My question: -

Copyright Maryland Public Television 2009, Local Service Initiative

The answer I found:

My question: -

The answer I found:

My question: -

The answer I found:

My question: -

The answer I found:

My question: -

The answer I found:

My question: -

The answer I found:

Copyright Maryland Public Television 2009, Local Service Initiative

My question: -

The answer I found:

My question: -

The answer I found:

My question: -

The answer I found:

My question: -

The answer I found:

My question: -

The answer I found:

Copyright Maryland Public Television 2009, Local Service Initiative

**Brainstorm solutions**

Once you are satisfied you have found all the information you need, start brainstorming.

First of all, you need to define the big question that your project will answer. This question has to be "juicy" enough to help you find a good solution.

Write your big question here:

_____

_____

Now, think of all the possible solutions you might find that answer that question.

SOLUTION 1:

_____

_____

SOLUTION 2: -

_____

_____

SOLUTION 3: -

_____

_____

SOLUTION 4: -

_____

_____

SOLUTION 5: -

_____

_____

Copyright Maryland Public Television 2009, Local Service Initiative 

Lastly, pick the solution that you think best answers the question and circle it.

**Pick a solution and plan**

Use the grid below to create a plan for your fitness trail. There's an extra grid on the next page to use if you need to. Remember to transfer elevation lines from the topographic map onto the grid.

Scale: 1 grid square = 660 feet or 201.168 meters

Copyright Maryland Public Television 2009, Local Service Initiative

Scale: 1 grid square = 660 feet or 201.168 meters

Copyright Maryland Public Television 2009, Local Service Initiative 

**Try it out**

You have a couple of options here. You can actually set up part of or all of the course in a nearby area, or you can construct a model of your course. Be sure that the people on the course have enough directions so that they know what to do and how to do it.

If you can set up an actual fitness trail, you can test it out by working your way through the course and having some friends do the same.

If you set up a model, try it on mentally. How long might it take you to complete each activity? The whole course? Would this be the same for all people? What about the physically unfit? How could they use the course? How long do you have to walk to get through the entire course? Might this be too far for the very young or the very old? How does your course compare with others? Is it about the same or very different from other ones that you have looked at? Is this a good thing?

And remember your budget. How much might you be spending on equipment? Does this leave room for installation, your salary, and other costs?

Summarize what you found out here:

Copyright Maryland Public Television 2009, Local Service Initiative

**Improve your solution**

There's always room for improvement. Check back over your information and your model. Remember what you found out when you tested out the model. Remember the parts of the engineering design process and work your way back through them all.

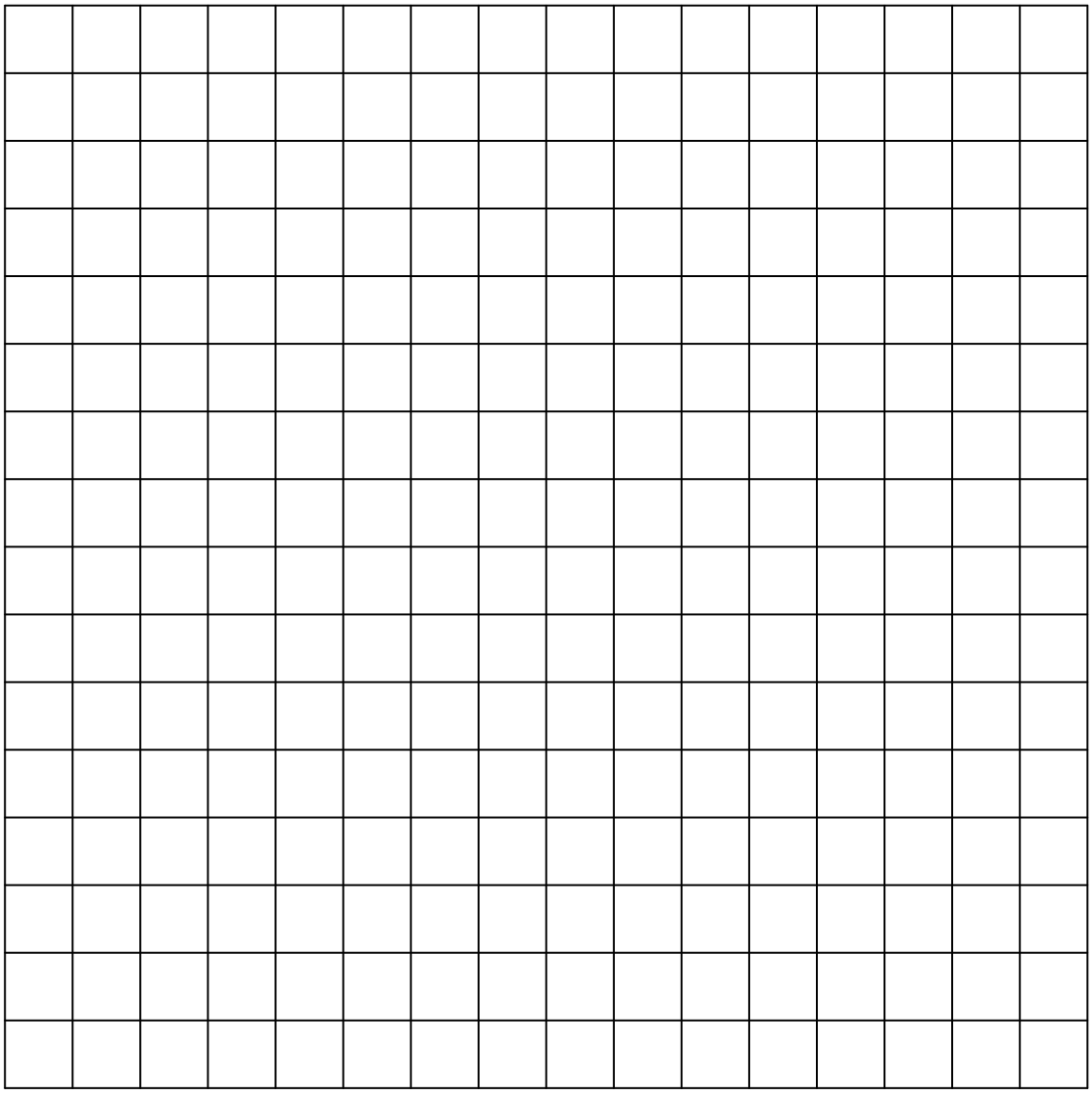
Given all that, how would you improve your fitness trail?

**FINAL STEP**

Congratulations! You've completed your task. Use the grid on the next page to complete a drawing of your improved fitness trail, or complete a three-dimensional model.

Copyright Maryland Public Television 2009, Local Service Initiative

TOPSTON FITNESS TRAIL
By _____



Scale: 1 grid square = 660 feet or 201.168 meters

Copyright Maryland Public Television 2009, Local Service Initiative