

Willowbank School Knowledge-athon Fundraiser
Patterns Projects

Set C

Patterns Project Set C #1

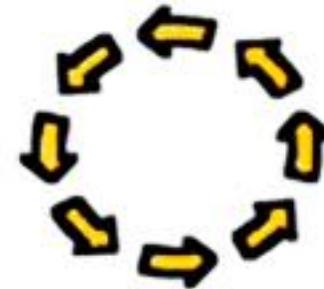
Cyclic Causality

- One thing impacts another which in turn impacts the first thing (or alternatively impacts something else which then impacts something else and so on, but eventually impacts the first thing)
- Involves a repeating pattern
- Involves feedback loops
- May be sequential or may be simultaneous
- Typically no clear beginning or ending (Sometimes you can look back in time to a beginning but often that results in the classic 'which came first, the chicken or the egg' problem.)

Some Examples are:

- A home heating thermostat.
- The water cycle.
- "If You Give A Mouse A Cookie" books.

Can you think of any others?



Patterns Project Set C #2

Roman Numerals

Research Roman numerals, find out what the pattern is. Once you discover the pattern create a poster to show you understand.

Success Criteria:

- Display information on where they came from.
- Explain the pattern used in roman numerals.
- Present it in a creative way.



Patterns Project Set C #3

Your fingerprint is unique

Investigate how you can take your own fingerprints, either use an ink pad or by drawing lots of pencil on paper then press your finger onto it and finally putting sellotape over your finger. Take one fingerprint from each family member and compare and contrast them to see the similarities and differences. Then present your findings in a creative way.

Success Criteria:

- Display your fingerprints.
- Write a paragraph on what you found.
- Explain what fingerprint style that you mainly had.



Patterns Project Set C #4

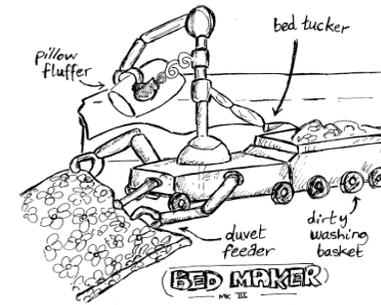
Design A Machine

Are there any jobs that you don't like doing around the house?

Are there any tasks that other people in your family don't like doing?

Imagine that you could buy special machines to do the tasks that nobody likes doing. I want you to invent a machine to do one of those tasks.

Draw a picture of your machine and label your picture to show what parts do what. Write down why you've decided to invent the machine and tell us a little bit about how it works.



Patterns Project Set C #5

Domino Causality is:

- Sequential unfolding of effects over time
- An extended linear pattern that results in direct and indirect effects
- Typically has a clear beginning and a clear ending
- Can be branching where there is more than one effect of a cause and these may go on to have multiple effects
- Anticipating outcomes involves deciding how far to trace the possible effects. Not planning for all possibilities can lead to unintended effects



Some examples are: A really big snow storm that leads to traffic snarls, school closings, when your alarm clock doesn't go off!

Can you think of other examples?

What might be the consequences of some of these events?

Success Criteria:

Creatively present your findings. Perhaps you could use a flow chart or mind map.

Patterns Project Set C #6

Sudoku

Investigate Sudoku, find out how it works, create your own Sudoku for a friend to solve you can choose whether you use numbers or a pattern just make sure it is able to be solved.

Success Criteria:

- Create a Sudoku in either a 2x2 square grid or a 3x3 grid.
- Make sure that someone at home can solve it first.
- Use either numbers, shapes or letters.

Level 1 Sudoku

Patterns Project Set C #7

Stomp

Research the dance group 'Stomp' watch a video on one of their performances on youtube. Using materials around your home see if you can create your own dance/music performance. Be creative, you could use pots, salt shakers etc. Then bring in your materials you need to present it to your class.



Success Criteria:

- Create a creative musical/dance performance.
- Use at least 1 item from your home.

Patterns Project Set C #8

Morse Code

Research morse code and discover what it is, using the code create your own message for your classmates to solve **or** pretend you are in the war and your enemy knows morse code, come up with your own code and construct a secret message, ask someone to solve it for you.

Success Criteria:

- Create a morse code message.
- Get someone at home to solve it or a classmate.



Patterns Project Set C #9

Technology Challenge

Design and construct a product that can be used in the junior school to help them learn fractions. For example: a website, online game, playdough/slime. You may like to survey some of the junior school children to find out their needs, interests, favourite colours etc so that your product will meet their needs and get them enthusiastic about fractions.

Come up with a presentation to market your product to the junior school teachers outlining costs and other information they may need to know.

Success Criteria:

- Have a finished product to present.
- Make sure it meets the needs of the junior students.



Patterns Project Set C #10

Uniform time

You have secured a very lucrative sporting deal with your favourite sporting team.
You are going to research and design a uniform for your favourite sporting team.

Think about what sport your favourite team plays.

You will need to research a range of materials and record the positives and negatives of each of them.

You need to make a decision on what is the best material/combination of materials to make your uniform from.

For example, If you're creating a rugby uniform you will need to find a material that is strong enough that it won't rip when it is stretched but also light enough that it won't absorb water and become heavy when it's raining.

Success Criteria:

- A list of the materials you have researched with the positives and negatives of each.
- Select a material/combination of materials to make your uniform from and justify why you chose these.
- Include front and back design of the uniform.

Total stamps:					

Extra activities and projects I have completed:

Total stamps:					