

Name: _____

Final Grade: **B-**

Nifty Novelty Containers

Performance Standards for Stage 1 Essential Mathematics - ~~_____~~

Concepts and Techniques		Reasoning and Communication
A	<p>Knowledge and understanding of mathematical information and concepts in familiar and unfamiliar contexts.</p> <p>Highly effective application of mathematical skills and techniques to find efficient and accurate solutions to routine and complex problems in a variety of contexts.</p> <p>Gathering, representation, and interpretation of a range of data in familiar and unfamiliar contexts.</p> <p><i>Appropriate and effective use of electronic technology to find accurate solutions to routine and complex problems.</i></p>	<p>Accurate interpretation of mathematical results in familiar and unfamiliar contexts.</p> <p>Highly effective use of mathematical reasoning to draw conclusions and consider the appropriateness of solutions to routine and complex problems.</p> <p>Proficient and accurate use of appropriate mathematical notation, representations, and terminology.</p> <p>Clear and effective communication of mathematical ideas and information to develop logical and concise arguments.</p>
B	<p>Knowledge and understanding of mathematical information and concepts in familiar and some unfamiliar contexts.</p> <p>Effective application of mathematical skills and techniques to find mostly accurate solutions to routine and some complex problems in a variety of contexts.</p> <p>Gathering, representation, and interpretation of data in familiar and some unfamiliar contexts.</p> <p><i>Mostly appropriate and effective use of electronic technology to find mostly accurate solutions to routine and some complex problems.</i></p>	<p>Mostly accurate interpretation of mathematical results in familiar and some unfamiliar contexts.</p> <p>Effective use of mathematical reasoning to draw conclusions and consider the appropriateness of solutions to routine and some complex problems.</p> <p>Mostly accurate use of appropriate mathematical notation, representations, and terminology.</p> <p>Clear and appropriate communication of mathematical ideas and information to develop some logical arguments.</p>
C	<p>Knowledge and understanding of simple mathematical information and concepts in familiar contexts.</p> <p>Application of some mathematical skills and techniques to find solutions to routine problems in familiar contexts.</p> <p>Gathering, representation, and interpretation of data in familiar contexts.</p> <p><i>Generally appropriate and some effective use of electronic technology to find solutions to routine problems.</i></p>	<p>Generally accurate interpretation of mathematical results in familiar contexts.</p> <p>Appropriate use of mathematical reasoning to draw conclusions and consider the appropriateness of solutions to routine problems.</p> <p>Generally appropriate use of familiar mathematical notation, representations, and terminology.</p> <p>Appropriate communication of mathematical ideas and information.</p>
D	<p>Basic knowledge and some understanding of simple mathematical information and concepts in some familiar contexts.</p> <p>Application of basic mathematical skills and techniques to find partial solutions to routine problems in some contexts.</p> <p>Some gathering, representation, and basic interpretation of simple data in familiar contexts.</p> <p><i>Some appropriate use of electronic technology to find solutions to routine problems.</i></p>	<p>Some interpretation of mathematical results in some familiar contexts.</p> <p>Attempted use of mathematical reasoning to consider the appropriateness of solutions to routine problems.</p> <p>Some use of familiar mathematical notation, representations, and terminology.</p> <p>Attempted communication of simple mathematical ideas and information.</p>
E	<p>Limited knowledge or understanding of mathematical information or concepts.</p> <p>Attempted application of basic mathematical skills or techniques, with limited accuracy in solving routine problems.</p> <p>Some gathering and attempted representation of simple data in a familiar context.</p> <p><i>Attempted use of electronic technology to find a solution to a routine problem.</i></p>	<p>Limited interpretation of mathematical results.</p> <p>Limited awareness of the use of mathematical reasoning in solving a problem.</p> <p>Limited use of mathematical notation, representations, or terminology.</p> <p>Attempted communication of an aspect of mathematical information.</p>

Measurements provided:

- ~~Dimensions seem reasonable.~~

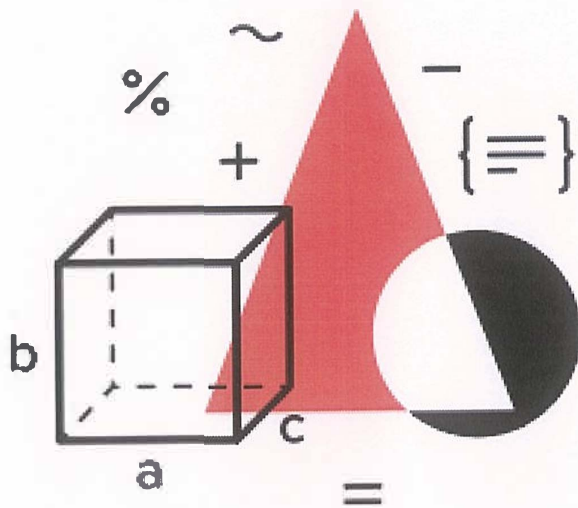
Design:

- Strong and clear sketches. Neat, detail and care provided. Good job!
- You needed to fix up the net of your final design and incorporate the measurements -- this wasn't done.

Discussion:

- Most points raised well. Some ideas needed clarity.

Stage 1 Essential Mathematics
Assessment Type 2: Folio
Topic 3: Geometry



AIM

The aim for this investigation is to design a unique novelty container and then build a 3D net on which the container can be built.

OUTCOME

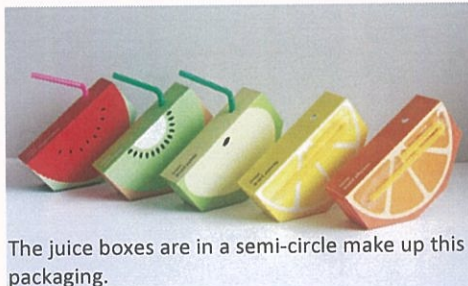
Students must create a novelty container for this folio assignment. They look at a variety of packaging options for things like lollies and other packaged goods. They build their own novelty container and use construction techniques to make a 3D net for it. Students must consider where tabs should be placed in order to create the novelty jar. Considerations of advances in novelty container design, such as mechanisms that keep their novelty container closed after it has been opened, will add to the difficulty. The net can need to be drawn over more than one piece of paper, depending on the size of the novelty container designed, and consideration given to how tabs would be used to connect the separate pieces. Students evaluate the efficacy of the net they built and address any issues that they found.

PART 1

Investigate a range of different containers that are currently being used for packaging food or other goods such as chocolates, biscuits and toys. Include five images of packages that you've found interesting.



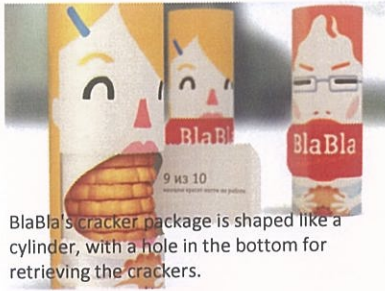
The Doritos are packaged in a triangular prism.



The juice boxes are in a semi-circle make up this packaging.



McDonald's has created a trapezium-shaped box that flips out and stores the food.



BlaBla's cracker package is shaped like a cylinder, with a hole in the bottom for retrieving the crackers.



The packaging is in the shape of a triangular prism.

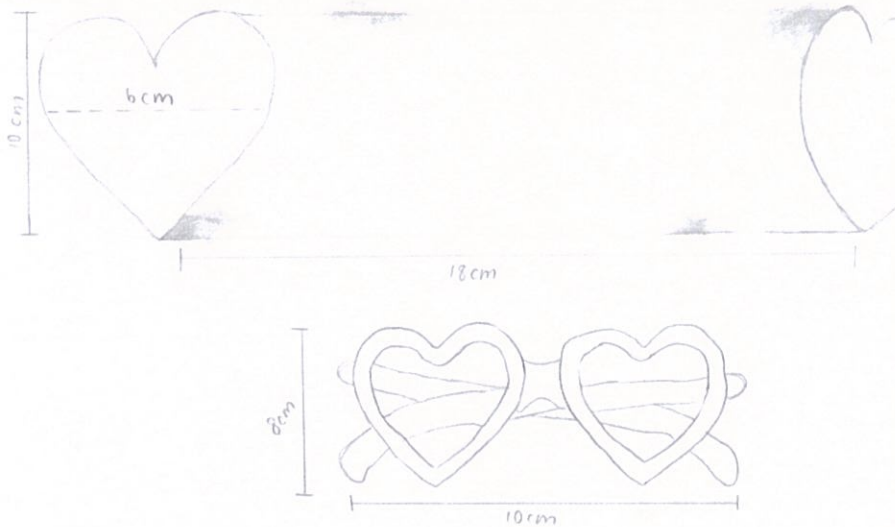


Three rectangle sides and one long rectangular side make up the design of these juice boxes.

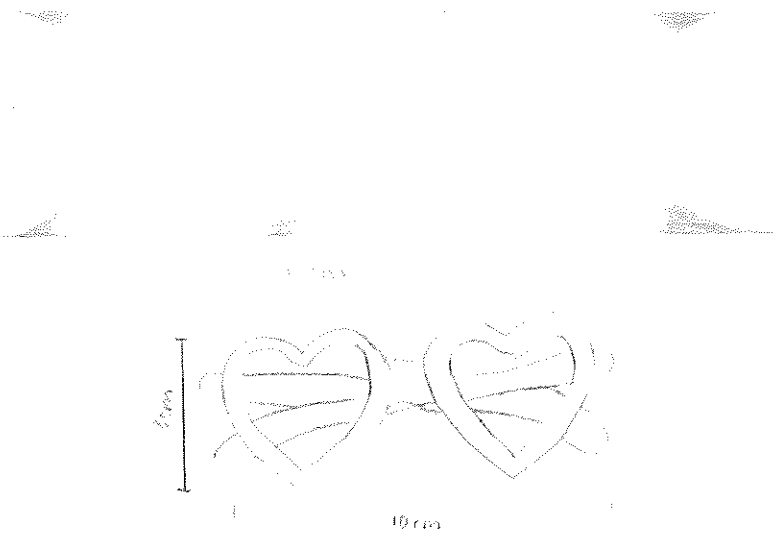
Decide and discuss what you will package in your novelty container.
 A hexagonal prism will be the container for the love-heart sunglasses.
 Shown in sketch 3

Draw at least three rough sketches of possible novelty container that you will consider. Identify the 2D shapes that will be used, and possible dimensions (length, height and depth).

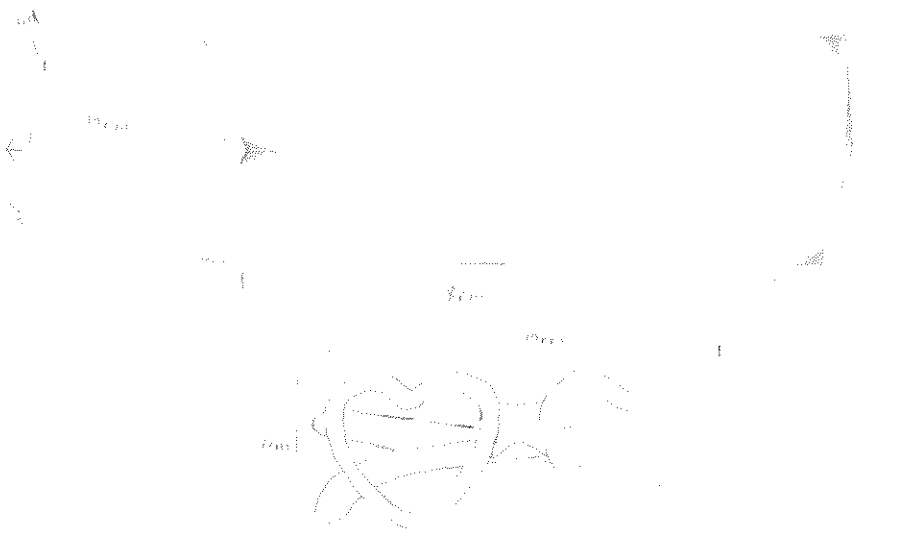
Sketch 1



Sketch 2



Sketch 3



Commented [BM1]: Good work! Neat and very presentable.

For this investigation, sketch 3 will be the final design for this packaging.

Sketch 4

Compare the space efficiency of your designs.

Both Sketch 1 and 2 save a lot of space efficiency because the shapes are the same all the way through. In comparison to the other sketches 3, the layout of the lid has an impact on the amount of space that can be held within the packaging. Because the lid is a hexagon, that shape is constructed all the way through the case, causing the case to go in and out with less room than sketches 1 and 2 because they are both cylinders.

Commented [BM2]: Link the shape of the glasses itself (which are flat) and the fact that you have an approximate 10cm wide case.

Does this design have the most market appeal and why?

Since its exclusive and something most people haven't seen before, this packaging will have a wide range of marketing appeal. People would be more drawn to these sunglasses cases because they are hexagonal shaped. Persuading them to buy the special cases instead of the bland simple case.

Commented [BM3]: Good – link to colour and other marketing techniques potentially.

What will your design be made of (in terms of material) and why?

The design of the love-heart sunglasses will be made up of hard plastic. Since this style is made of hard plastic, you will be able to see through the outside of the package. The glasses will benefit from having the box surrounded by hard plastic. The strong plastic will prevent them from cracking if they are dropped before being used. This type of material will be used so that anyone who pass them can see what they'll be getting and how the glasses are designed.

Commented [BM4]: The box for the glasses?

Commented [BM5]: Good.

Are there any other factors that need to be considered?

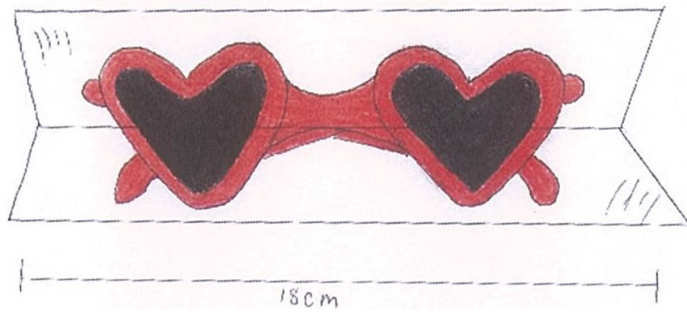
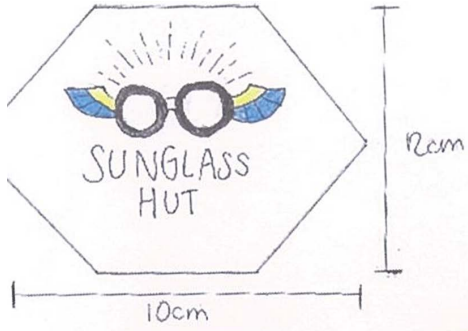
When designing the packaging for these exclusive glasses, other considerations must be considered. You should consider what colour would entice people to purchase the glasses. Bright colours will stand out the most, causing people to recognise the product and be more likely to buy it. Another thing to consider when creating a package for an object is how the package would be laid out. Having something unique in the box, as well as something that looks good and neat, is something that customers would not regret purchasing.

Commented [BM6]: Good!

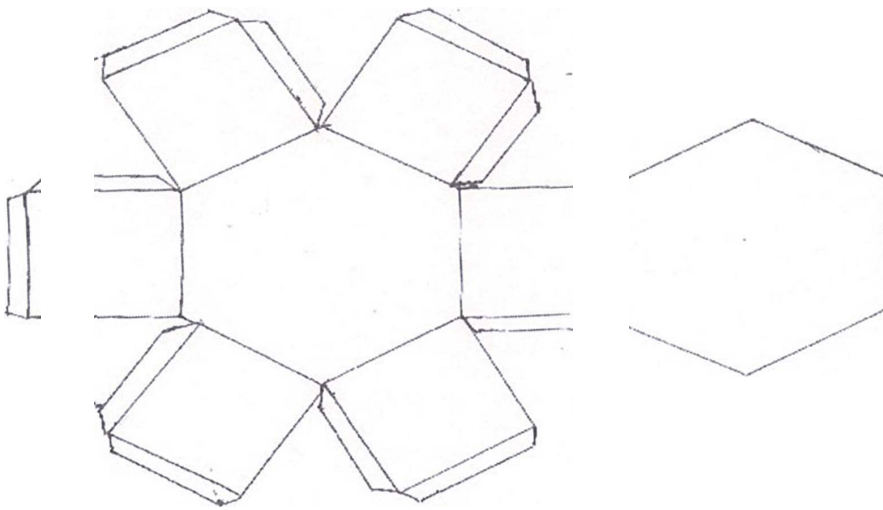
PART 2

Commented [BM7]: Nice!

Draw a reasonable sketch of what your novelty container will look like and include the *relevant* measurements (e.g. width, height, and length of edges).



PART 3



PART 4

Discussion

The first net attempt at making a sunglass case wasn't quite correct. Since the template was more of a square shape than a rectangle, it needed to be modified to the proper shape. As a result of this problem, the net and design were not identical, necessitating the replacement of one of them. Another thing to consider when constructing the net was if there would be any open spaces or whether it was perfect when folded up. If this was the case, and the net didn't fold properly, a hole would form, making it easier for the product to fall out. This was not a concern during the investigation, but it was considered and performed well while developing the net. One of the key issues with the net's design and how it functions is that it does not display the viewers the tray inside the case where the glasses can be retrieved. The lid of the tray to take the glasses out of is the hexagon shape on the top of the box. This keeps the audience from seeing how you open the case to get the glasses.

Conclusion

In conclusion, this investigation was successful with making a suitable sunglass case that would sell at your local retailers like Target and Kmart. There were a few problems that needed to be fixed throughout the investigation, but that was resolved with solutions that would make the design suitable for its audience.