

**Benchmarks:**

- 9d Uses tools and equipment to manufacture models/products
- 10b Recognises that materials have different properties and uses.
- 10c Recognises that material properties have an impact upon manufacturing processing choices.
- 10e Justifies selection of materials when developing a solution to a problem or brief
- 10f Discusses sustainability and environmental impact of sourcing and using different materials.
- 12c Explains energy transfers within a system

# S2 HOMEWORK DESIGN & TECHNOLOGY



# HOW IT WORKS

You can complete any homework you wish from any category and as many as you want for each deadline. However, no task can be completed more than once.

Your teacher will award between 5-30 points in the grid below dependant on how much effort you have taken with the task.

Homework Due (week beg.)	Parental Signature	Teacher Signature	Points Awarded
4 <sup>th</sup> December			
22 <sup>nd</sup> January			
5 <sup>th</sup> March			
9 <sup>th</sup> April			
7 <sup>th</sup> May			

Remember to complete the homework journal at the back of this booklet with a short description of what the task you have completed, why you chose the task and summarise what you learned while completing it.

## REWARDS

50 Points: Merit Mark

100 Points: Merit Mark & Certificate

150 Points: Merit Mark & Small Prize

200 Points: Merit Mark & Prize

# TASKS

## INVESTIGATE



- Most structures have triangles and hollow shapes at the heart of their structural skeleton. Research why these are used.
- Structural failure can cost lives: a bridge collapsed in China over the Jiantuo River. Research how and why this happened and summarise how this could be avoided in the future.
- New technology changes the world, choose one item (e.g. phone) and research how technological advances have led to this products' development. You may use images to support what you have written.

- When products are manufactured, the material must be considered in order to decide how to produce it. All materials have different properties. Investigate what the following terms mean in relation to material properties: Strength, Ductility, Elasticity,

## PRESENT



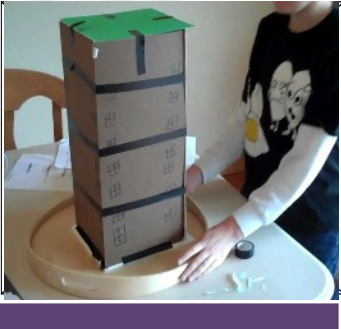
- Flat pack furniture has revolutionised the furniture industry, one major company in this industry is Ikea. Present how Ikea has led development in flat pack furniture.

- We use energy in every aspect of our lives both at home and in school. The problem is we are burning through our energy resources at an alarming rate and will eventually run out. Sustainable energy is gaining more importance as resources run low. Choose one type of sustainable energy (wind/solar etc) and research its pros and cons.

- When you eat, you can use the energy you have consumed and transfer this energy into heat, sound and kinetic (movement) energy. Energy is transferred in systems in similar ways. Present on the energy transformations in a car. Where does the energy come from? What is it used for? In what form?

YOU CAN PRESENT IN ANY WAY YOU WOULD LIKE: POWER POINTS, POSTERS, RECORDINGS OR ANY OTHER WAY YOU CAN THINK OF!

# BUILD



- Design and build your own tower- You Tube has excellent ideas and tips to get you started.
- Recreate your own bedroom, old boxes and wallpaper samples are an excellent way to create your walls!
- Create a parachute model which could carry an object- Google egg parachute to get some ideas!
- Designers often create small models when designing new products- create a small model of a product you have designed. Play-doh is an excellent medium for modelling. Google Volvo car model for an amazing example!

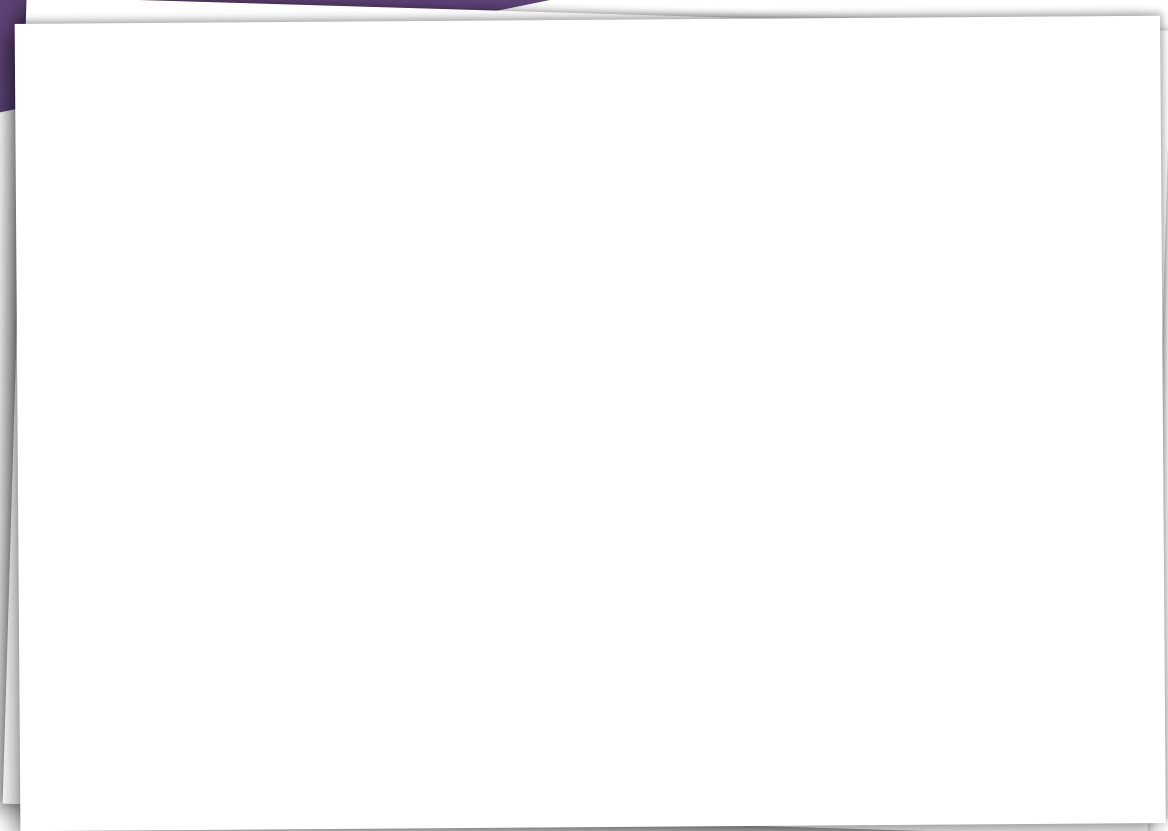
DESIGN AND BUILD FROM BITS AND PIECES YOU FIND ROUND YOUR HOME. SOME OBJECTS YOU MIGHT WANT TO USE ARE: OLD PACKAGING, STRING, STRAWS, SELLO-TAPE, BLU-TAC, SKEWERS OR EVEN A GLUE GUN IF YOU HAVE ONE.

## HINTS & TIPS

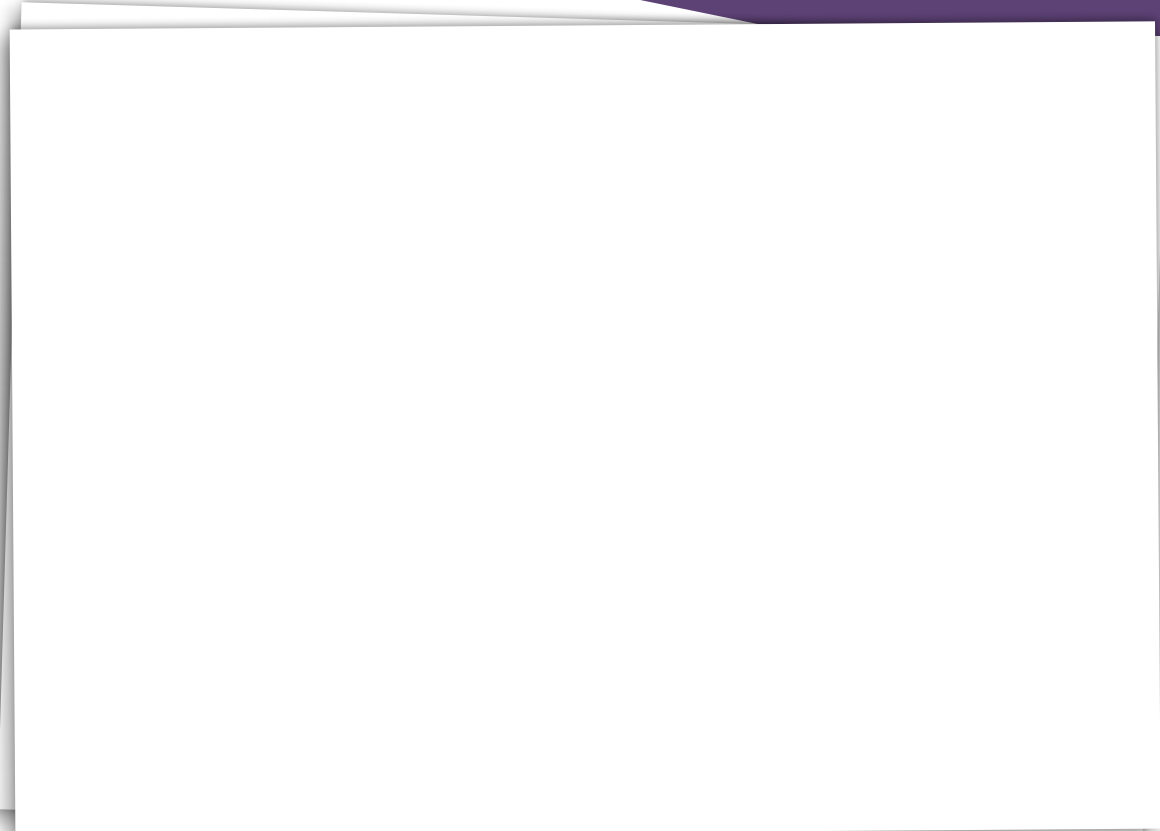
1. Use the website [www.technologystudent.com](http://www.technologystudent.com) for help
2. You can email homework to your teacher- ask them for their email.
3. Don't leave your homework to the last minute.
4. You can complete homework during lunchtime if its easier for you.  
just ask your teacher when you can access the department.
5. If you require any resources we are happy to provide these just ask.
6. Make yourself proud, do your best and make the leader board!

# HOMWORK JOURNAL

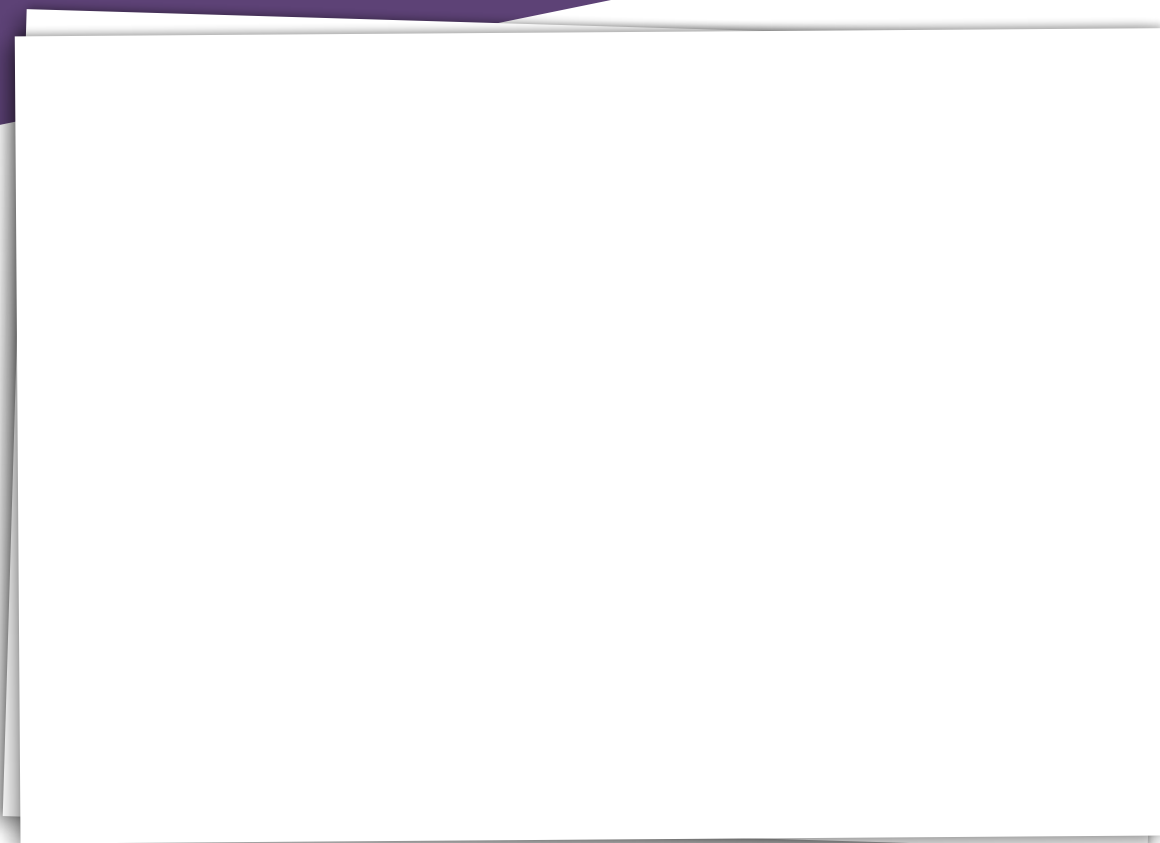
4<sup>th</sup> December



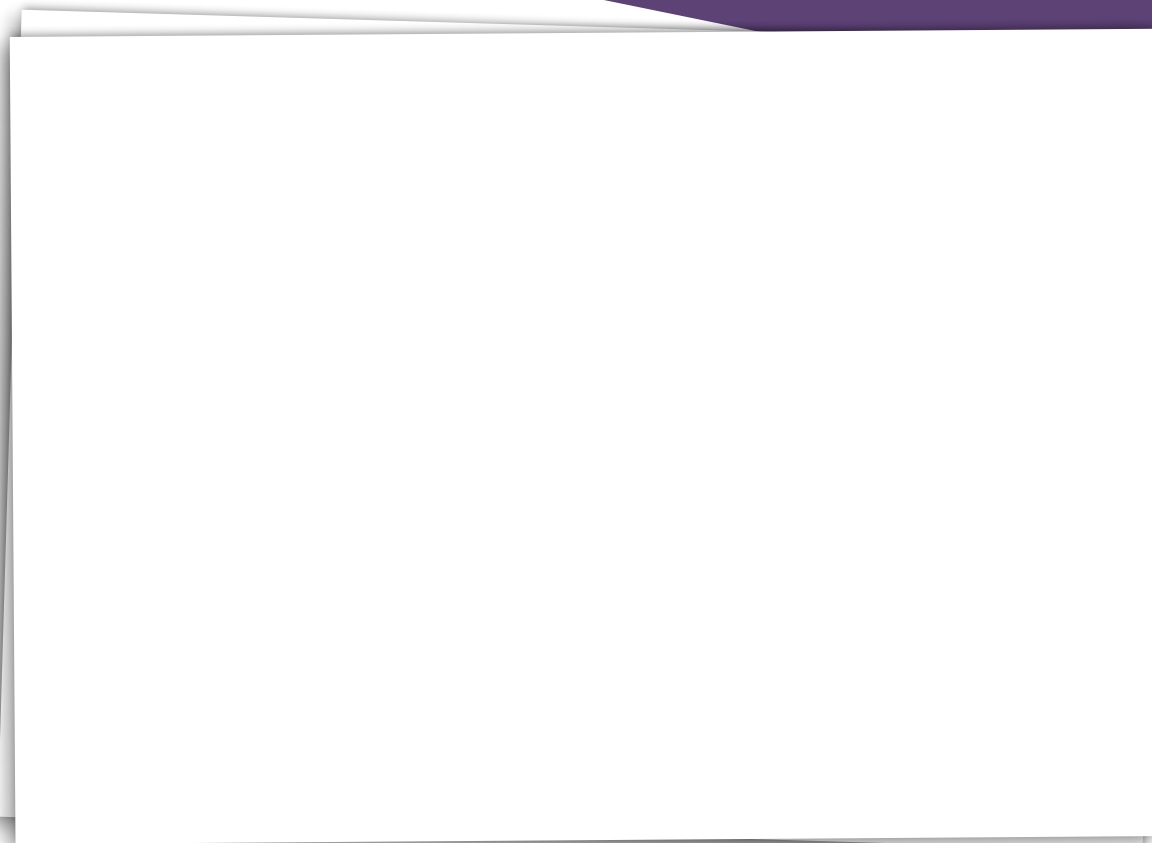
22<sup>nd</sup> January



5<sup>th</sup> March



9<sup>th</sup> April



7<sup>th</sup> May

