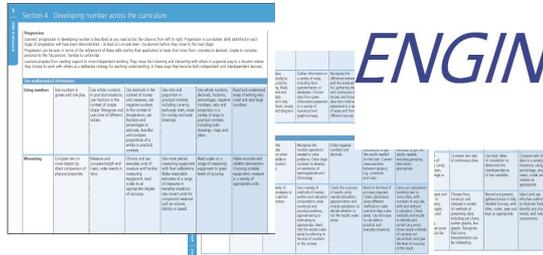


Skills Framework

Number



ENGINEERING YOUR FUTURE

Using Numbers

KS3	KS4
Scale of boats/ ratios.	Scaling boats from full size.

Measuring

Working out measurements for fitting boats to standard sizes of materials ie vacuum form apertures.	Measurements of components especially small diameters of prop shafts.
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Gathering Information

Collect data from: SMC web-site/ internet/ supplier catalogues eg Rapid Electronics, Technology Supplies, Techsoft etc.	Technical Data regarding design parameters, styles , material properties – performance motors, solar cells, capacitor values and application.
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Calculate: Using the Number System

Simple calculations – power from cells, speed of craft etc.	How to calculate speed mass of components.
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Using a variety of methods

Converting sketched ideas into dimensional drawings.	Scale calculations of boats – Proportion, LOA
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Interpret and present findings: Talking about and explaining work

Show data regarding design and performance.	Show how design was arrived at eg cells in parallel/ series, power from cells, motor speed, speed calculations.
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Comparing data

Make comparisons of boat performance.	Evaluation of craft using different set-ups/ designs- compare boats built by different teams.
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Present Findings

Plot charts to show how boats performed.	Show graphically how changing the parameters can affect performance – excel data etc.
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