

BMFA DART

TEACHER/TUTOR NOTES & WORKSHEETS



The British Model Flying Association (BMFA) DART is a rubber powered flying model aircraft with a 30 cm wingspan which can be flown in a sports hall or outdoors on a calm day.

The **DART** provides a flight-related project which gives an excellent opportunity to explore the history and science of powered flight and also importantly **to** construct a real flying model and have some fun. The project should take 4 to 5 one-hour Club sessions including a flying display.

The BMFA Instructions supplied with the Kit will be those used for the project, along with those of the Card Wing Fixture Jig.

Features

- Proven powered flying model.
- Simple rubber powered aircraft.
- Rotary 14cm twin bladed propeller.
- Wingspan 30cm.
- Overall length 32cm approx.

IMPORTANT At least two weeks before starting the project:

- Read the BMFA Instructions carefully.
- Read the DART Facts Booklet (one supplied for each Club)
- Ensure that you have all the tools, glue, scissors, safe sharp cutting implements, pins, sellotape all as per Item 1 of the BMFA Instructions supplied with each Kit.
- For each member of the Club obtain a piece corrugated cardboard or flat wooden board approx. 300mm x 400mm as a work board. Item 2 of Instructions.
- Construct the DART yourself to familiarise yourself with the procedures and any difficulties the youngsters may encounter during the project.
- Ensure that there is a box or large manila envelope for each Club member to store the parts during the build. Also as the balsa wood and components are fragile ensure that the kits can be stored from week to week where they will not get damaged.

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WORKSHEET

1. Name who made the first powered flight in an aircraft
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2. a) Where did the first powered flight take place ?.....
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b) When did it take place ?.....
3. What are the four principal forces that affect an aircraft flying?.....
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4. What is the accepted shape of an aircraft propeller blade?.....
5. Who invented the jet engine ?.....
6. Draw a diagram showing the effect of Bernoulli's Principle on an aircraft wing.

7. Name the three special terms used to describe an aircraft's movements in flight ,round the various axis which each of these three movements take place, also define what they mean.
 - i)
 - ii)
 - iii)