

# UKRA, MAP – Bronze Level – Assessor advice and guidance

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## Who is this document for:

Anyone interested in the UKRA Model Achievement program and a structured award program target at an introduction to model rocketry. This document is the 'main' MAP Bronze document.

## Introduction:

Welcome to the UKRA Model Achievement Program (MAP). This document has been published by the United Kingdom Rocketry Association to support the Bronze level of the MAP.

The Bronze level is designed to provide a structured introduction to model rocketry, it has a particular focus on younger fliers, though anyone interested is very welcome to take part.

This document supports the core achievement document that is published separately, as MAPBAC. Please pass any comments or issues to the author.

This document does not add to, or change the applicable safety codes, RSO functions and responsibilities or other controls and safe and responsible flying.

This assessment is not to be performed at the same time as, or on the same day as another UKRA assessment, award or certification.

## Document Set

Please be familiar with the following documents prior to assessing or attempting the Bronze level of UKRA MAP:

- MAPBGuide – General guidance, this document
- MAPBAC – Bronze Requirements.
- MAPBAN – Separate record of achievement steps, available as a separate form on the UKRA-MAP web page.
- The glossary has been moved to the UKRA MAP website and is no longer published separately.

## MAP Description

The MAP bronze award exists to provide a novice rocket flyer with a set of relatively simple challenges that could be completed in a single day. Achievement in a single day is not necessary, the core and elective can be split to different days. Progress should be recorded on a separate paper record sheet available on the web site.

This is the entry level award, and it is anticipated that the flyer will have some help in fulfilling the tasks. The notion that the flyer can receive some help when performing assessed activities is a feature of Bronze MAP award, and in particular, where the flyer is a younger child.

**IMPORTANT:** There are requirements for adult supervision within some safety codes and guidance especially as it relates to pyrotechnic motors. Those standards, and anything related to safety, always take precedence over MAP.

## Running the Assessment

A flyer is assessed on core activities, listed in the requirement document, these need to be observed by an assessor. At Bronze only, the assessor can also be the RSO, range safety officer, on duty (in accordance with safety code) and may also be different people between core and elective tasks.

EXAMPLE: loading and preparation of the motor maybe completed by an adult in accordance with relevant safety codes while still allowing the flyer to complete the award. This includes insertion of the motor, ignitor and attachment of the ignitor leads.

There are also elective activities, though the same basic rules apply. Core activities are expected to be completed before electives are attempted. Please take a pragmatic approach here, especially given the vagaries of English weather.

An assessor can be anyone with a good understanding of model rockets, and model rocket flying and who feels happy to perform the assessment. The assessor should be thoroughly familiar with the document set, notes on the web site and the safety code in force at the flying site. Note: An assessor does not require UKRA certification/awards to assess the Bronze award for others.

The Bronze level is designed to be completed in a single day with one assessor. It is recognised that this is not always possible. So, the flyer may perform the Core and Elective tasks at separate events.

At Bronze level, the assessor may choose to allow a task to be retaken, at their own discretion, this is an introduction to rocketry and as such, as “pass or continue” attitude is encouraged, this is discussed in more detail in a later section.

A key consideration for the assessor is, “am I assessing the flyer?” please be aware that young children may be helped too much by adults, who more properly are there to assist rather than perform tasks for them. We recommend discussing this with the flyer and any accompanying adult and allow a task to be repeated if necessary.

**Make sure that the flyer is not merely accompanying somebody else doing the work.**

### The rocket used

- The rocket can be a pre-built, a kit, or scratch built.
- The build need not have been done by the flyer.

- Conventional, pyrotechnic, single use motor only
- Motor acceptable to the RSO, and in accordance to safety guidance up to 5NS (“B” motor) for core activity and 10NS (“C” motor) for one of the electives.
- The rocket used must comply with all site, BMFA and UKRA requirements.
- Unless required for a specific elective the rocket must be a single piece, with no detachable components. Multi-stage or CHAD are not acceptable at Bronze.
- Unless required for a specific elective the rocket may fly with or without a payload (such as camera, sounder or tracker.) – No credit is given at Bronze level for doing so.
- The rocket may use streamer, parachute, or helicopter recovery. Tumble recovery is NOT acceptable.

## Assessor advice and guidance

### Observing flights:

When assessing a flight apply general RSO good practice, the assessor and or RSO may stop the task at any time if they have any concerns. For the Bronze award please take particular note of the following:

- The flyer carries out most of the on the day activity themselves.
- The flyer understands the launch controller and its operation. Note: you **may** wish to avoid the use of complex multi-step GSE in favour of less complex key and button launch controllers found in some beginners kits.
- The flyer operates the GSE themselves, though maybe instructed
  - The flyer inserts or operates any key or other safety device
  - The flyer demonstrates that they are following RSO instructions
  - The flyer presses the button, closes the contacts etc
- Recovery mechanism correctly deploys
- Recovered substantially intact:
  - The rocket **MUST** be recovered to complete a task
  - Scratches to paint, chips etc due to impact with trees, stones on the ground etc are acceptable and the task maybe recorded as complete.
  - Any damage that would prevent the rocket from flying again without repairs is not acceptable for completion of a task. It must therefore be repeated
- The motor is still in place.

### Poor lift, insufficient altitude or other flight related concern.

Such problems are unlikely with the rockets proposed for the Bronze MAP award, though it is possible. Before considering the task to be completed, did any failure or unexpected behaviour, for example an unstable flight or poorly timed recovery deployment indicate an error in the rocket or the flyer? (An example might be that a motor with an incorrect delay had been selected.)

If such a flight is observed, then the task may be considered incomplete and will need to be repeated. If the criteria in the above sections are satisfied, and the assessor believes that some

external factor such as weather or minor problems with a commercial motor then the assessor may choose to consider the task complete.

### Observing preparation:

At the Bronze level there is only a modest need to observe the preparation for a flight. In addition to standard RSO considerations, look to see that the flyer understands the basic steps and seems reasonably confident in basic tasks.

Please consider the following:

- Try and determine if the flyer has taken part in the prep for the flight. If you are not sure consider asking the flyer to repeat a simple task such as removing and repacking the parachute.
- Ask questions about motor selection, wadding etc. This is primarily looking for a basic understanding of preparation for flight.
- When the rocket is placed on the launcher see if the flyer is an active participant. Note: small children may appreciate easy GSE at this point. A simple design close to the ground might be ideal.
- Other tasks such as connecting to the ignitor, with RSO supervision, are also acceptable examples of engaged preparation. The check for the flyer is, 'is the flyer an active participant in the preparation for flight?'

### Questions and assessing behaviours:

At MAP Bronze level there is no need for a formal interview with the flyer, however the assessor is strongly encouraged to talk to the flyer to determine how much they understand about their rocket. Taking particular care with small children, the assessor should be prepared to ask questions later, or in a different way or at a different location.

An understanding of the basic functionality and components of a rocket, with perhaps a more detailed description of a single part will suffice. For example, 'what does an ejection charge do?', 'why does your rocket have a parachute?' is all that is needed.

Again, with children, the assessor may need to deal with hovering parents. It is important to let the child do the speaking. The assessor should not be afraid of interrupting and asserting a little influence over the Q&A. Remember an informal approach is acceptable for Bronze.

The flyer does not usually 'fail' this part of the assessment at Bronze level, but the assessor may wish to extend the conversation, or allow the flyer to check, ask questions of others, check the rockets instructions or packaging etc before renewing the discussion.

TIP: When dealing with smaller children do not lean over them, rather kneel down to talk to them at their eye level, ask questions directly related to the rocket they have, rather than rockets in general and start with simple questions to get the child used to talking to you, then try and draw out the child's understanding.

This task is only considered incomplete if the assessor has satisfied themselves that the flyer has taken no active part in the activity. Talk to the person that did do the work and see if a retake is possible.

## Assessing electives

The process is like the core tasks, though details on the requirements for each step are indicated on the MAPBAC.

The process for observing preparation and flight are as observed above.

Where the activity is non-flying, such as a build or preparation task closer observation is expected.

Example: Parachute build.

An example elective is to build a parachute from scratch. This can be done from a template, including one provided by a kit manufacturer. This is a build, so cutting, knotting etc are expected. Make sure that the flyer is carrying out a substantial part of the work themselves. Assistance and instruction is acceptable, especially where it relates to the safety of those concerned, for example use of sharp tools.

## Continuing the assessment

The Bronze assessment has been created to help familiarise new flyers with model rockets. It is therefore discouraged to think of failing at Bronze, instead think of the attempt continuing.

Where the assessor feels that awarding the Bronze award immediately is not appropriate, they will provide the flyer and any assistant (concerned parent/guardian etc) with advice. Explain simply what the issues were, and what corrections may be needed.

Where the problem is not directly related to an error of the flyer, encourage them to continue with another days flying. If practical, allow them another flight immediately. There is no issue at Bronze using a different rocket to retake the two core activities, or to switch electives.

Please do not assume success, when an assessment cannot be made, for example if a rocket is lost after a flight the task is to be repeated.

## Completion and next steps

Completion of the bronze award activity is described in the MAPBAC document.

Silver follows Bronze, and details can be found in document reference MAPSAG.

Bronze and Silver levels cannot be attempted on the same day by the same flyer.