Possibilities for use in competency-based lessons

Competencies that can be gained through building and working with the balloon vehicle:

- naming parts of the vehicle; usage; assessing variations

- making drawings (as planning proposal or as illustration)

- examining and possibly using air properties: air flows out, drives

- changing vehicle design

- designing and building a vehicle from scratch

Suggestions for the use of the materials in lessons:

1. Look at the construction task ('students' material' or a vehicle that has been partly built by the teacher) and consider how the balloon can be used as a drive.

2. Build the balloon vehicle, using the instructions or improvising depending on prior knowledge, motor abilities and time frame this can be done in groups, individually or with partners) – cardboard wheels will be fitted loosely onto wooden axles that are fixed in the casing; plastic wheels will be fitted to metal rods that sit loosely in the casing.

3. Write down the results in the 'students' material' and evaluate.

4. Examine and compare additional drives (see also OPITEC Model 208693 electric vehicle with belt drive, OPITEC Model 206772 fan-mobile or models from the children's field of experience).

5. design and build your own vehicle; for example from boxes, milk cartons and everyday materials. For this pre-made wheels and rods (see OPITEC catalogue pp 260 and 266) could be inserted in suitably thick drinking straws (7 mm) and taped to the bottom of the carton. Perforated cardboard from Techcard (see OPITEC catalogue p. 18) could also be used. Make drawings or photographs for documentation.

6. at the end let the finished vehicles roll down a slope (width and straightness) or have a competition (which vehicle goes furthest?), arrange an exhibition or visit one...

7. Extension: write a non-fiction text (instructions, description), find out more about the development of the automobile,...

The background: Technology Education

It is important in terms of successful technology education that the children use their prior knowledge to express assumptions and prepare drawings for this.