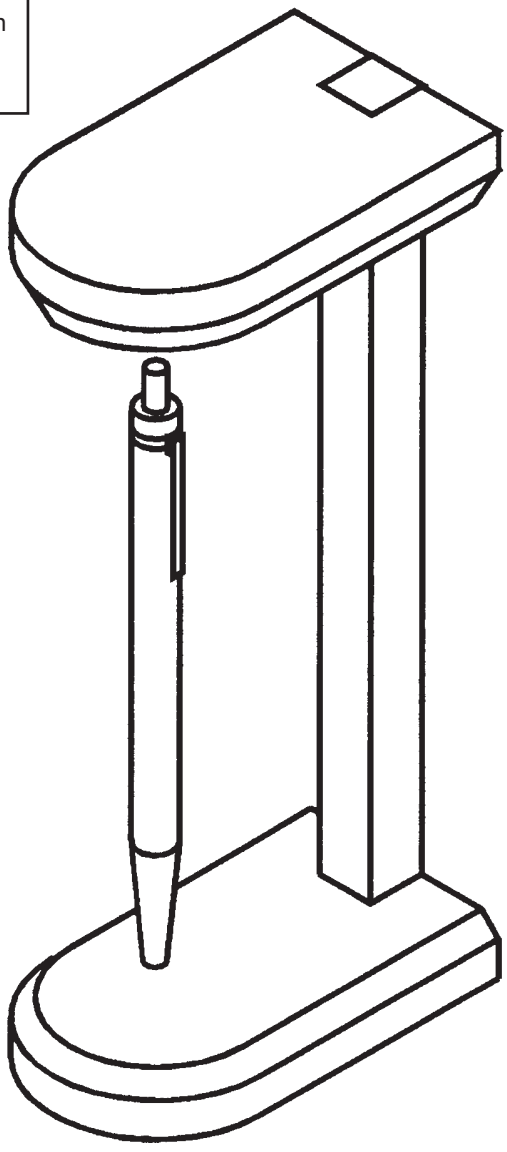
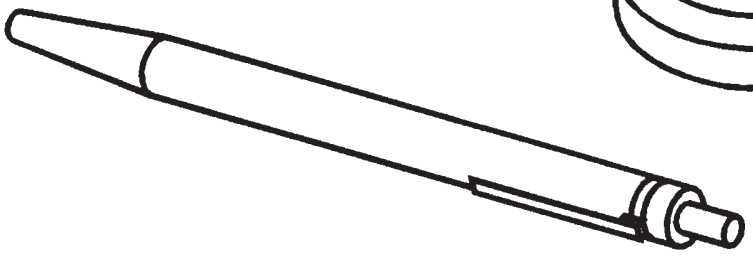
100.696/100.777

Magic Stand

Please Note

The OPITEC range of projects is not intended as play toys for young children.They are teaching aids for young people learning the skills of Craft, Design and Technology.These projects should only be undertaken and tested with the guidance of a fully qualified adult. The finished projects are not suitable to give to children under 3 years old. Some parts can be swallowed. Danger of suffocation!





Safety notes for working with magnets

Permanent magnets and magnetic article are technical products that require safety knowledge. All persons experimenting or working with magnets should read these note and keep them in mind!

Articles that can be influenced by magnets

- Computers or electronic data
  - Electronic machines
  - Heart pacemakers
- Injuries caused by crushing or pinching
- Danger caused by magnetic splitters
- Danger of fire and explosion
- Health dangers caused by contact with drinking water, food or ski

Working with magnets

- People with heart pacemakers should avoid contact with all types of magnetic fields
- Computers and other data storage units should be kept away from magnetic fields
- Magnets must be carefully handled in the presence of other magnets and objects made from iron There is a danger of injury caused by pinching or squashing-wear safety protection
- Magnets must not be used in an atmosphere where there is a danger of explosion
- Items made from iron should not be left near magnets
- Strong magnets can splitter when under attraction , to avoid injury when working with magnets wear safety glasses
- When working with magnetic properties in mechanical projects there is a danger of fire
- Glowing or burning magnets should not be extinguished with water, Co2 or halogen – use sand or powder extinguisher
- The presence of hydrogen can cause magnets to deteriorate and lead to them breaking up- avoid all contact between magnets and hydrogen
- Some magnets have a nickel coating which can cause skin allergy- handle – if this happens avoid all contact

Be careful with magnetism

- Be careful of magnetic fields, magnets can spring apart and cause accidents
- Fix magnets in a holder and never hold them freely in your hands
- Magnets can shatter
- Keep your working area free from magnetic pieces
- Read any special makers instructions that come with the magnets

Transport

- When transporting magnets by air there are special regulations that must be followed
- This also applies to appliances with built in magnets- contact airline
- There are also regulations for sending magnetic goods by post – see Post Office

1. Information:

Article: biro holder

Age: 11 - 12 years

2. About the process:

Materials: pine, a soft wood which should be dry before being worked on;

Working: pine can be sawn, rasped, filed, drilled and sanded;
measurements can be marked out on the wood or shapes drawn out using patterns or stencils;

Joining: dowel joints, or glueing. (PVA);

Surface finishing: use wax (solid or liquid);
wood varnish;
staining (colour water based stains - then varnished);

3. Tools:

Sawing: **Fret saw** - for curves and shapes;

Note! the teeth of the blades should face forwards

use a fret saw clamp to hold your work, saw carefully with regular straight strokes, turning the work as you go;

Dovetail saw - For straight cuts and sawing small sections of wood;

Note! hold the work in a clamp

Gents saw - for small cuts in stripwood and dowels;

Rasps / file: depending on the required finish of the work; first use a rasp and then finish with a woodfile; choose the correct shape of rasp / file for each job;

Note! rasps and files only cut in a forward direction

Sanding: use a sanding block for flat surfaces and edges, and loose sheets for individual shapes;

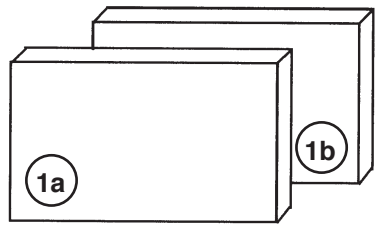
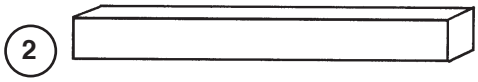
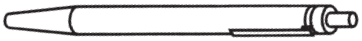
Drilling: use a hand drill or pillar drill;

Note! pay attention to the safety rules (long hair tied back, no jewellery or loose clothing, wear safety glasses and make sure that the work is held in a clamp);

Take especial care when using Forstner bits!

Clamping: when you are using a clamp, make sure that it does not mark or damage your work;

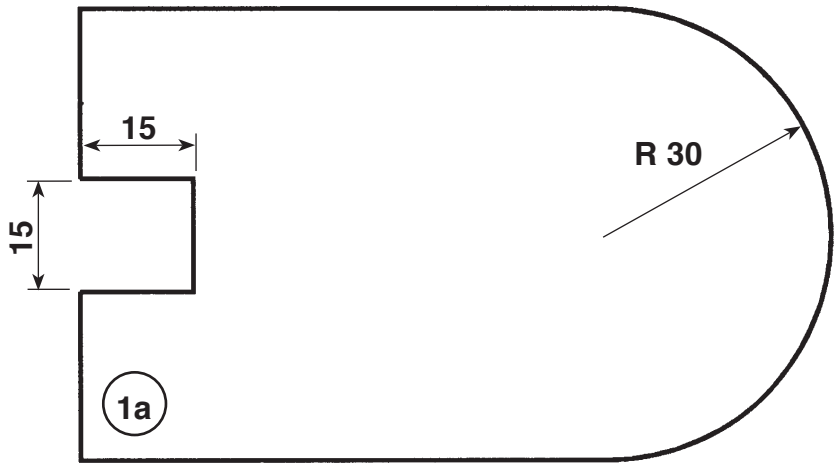
4. Parts List:

Description	Material	Quantity	Drawing / Part n°	Size
Base/Holder	pine board	2		100 x 60 x 15 mm
Support	strip	1		250 x 15 x 15 mm
Magnet	round magnet	1		ø 15 x 6 mm
Biro	plastic / wood with metalparts	1		ca. 135 mm

5. Assembly:

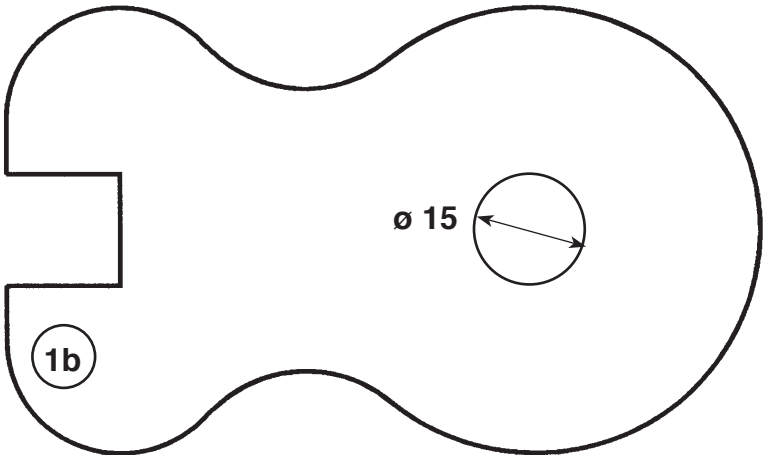
5.1. Base:
Pine 100 x 60 x 15 mm (part n° 1a). Mark out and saw as shown in the diagram. Glaspaper to finish (You can leave out the notch 15 x 15 mm for an easier version)

Pattern 1 : 1



5.2. Holder:
Pine 100 x 60 x 15 mm (part n° 1b). Mark out and saw as shown in the diagram. Glaspaper to finish. (You can leave out the notch 15 x 15 mm for an easier version).

Pattern 1 : 1



drilling 6 mm deep (you can glue the round magnet directly onto the marked spot on the board for the easier version)

Drill the blind hole for the magnet approx. 6 mm deep, and then glue the magnet in the hole.
Instead of drilling you can glue the magnet directly on to the wood.
The drilling should be supervised by the teacher.

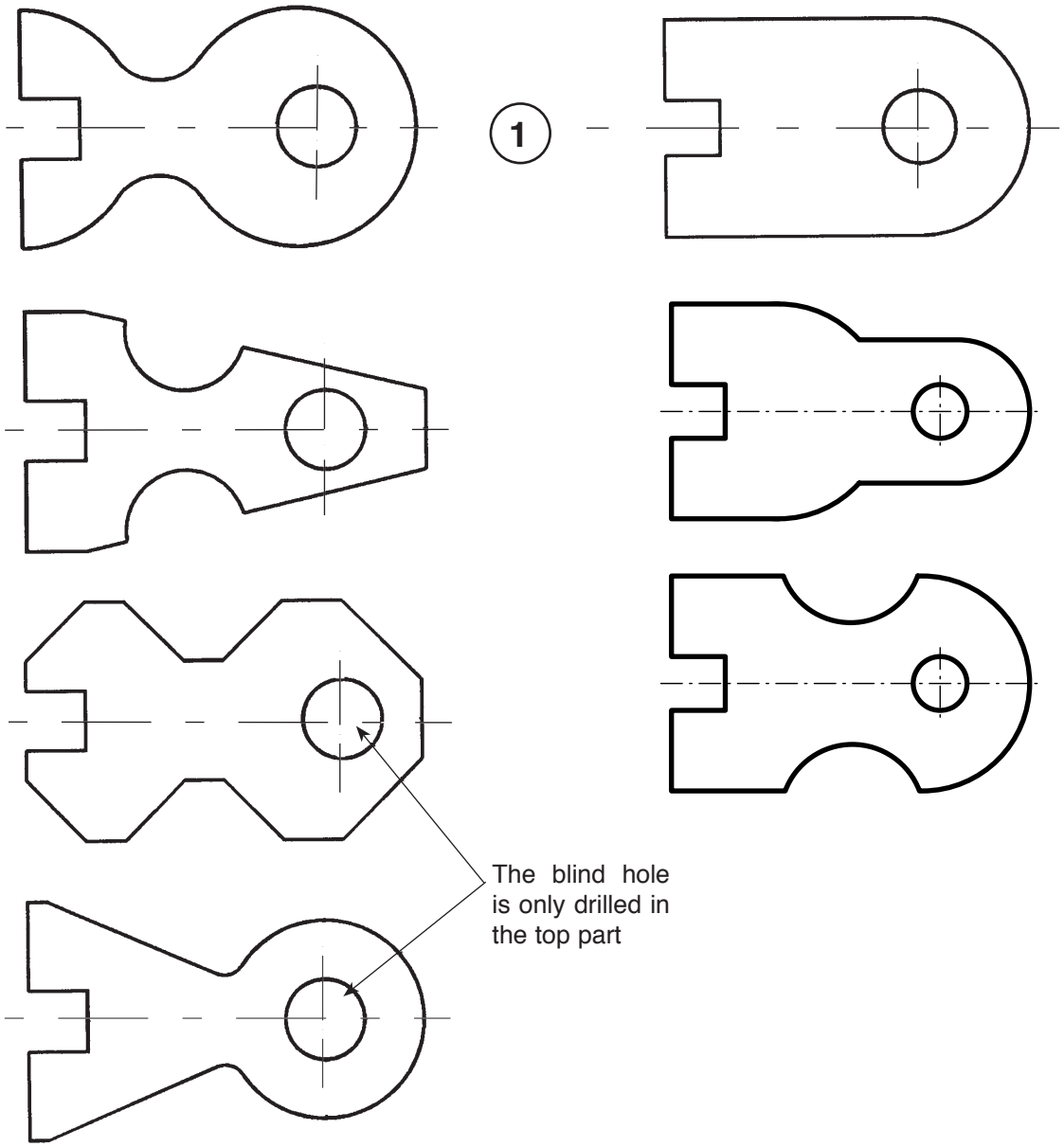
Remark: see overleaf for further design ideas

E100696#1

5. Assembly:

The base and top (part n° 1a and 1b) does not have to be of any particular shape.
Use your imagination.
Listed below are some examples of different shapes.

Design ideas:



5. Assembly:

5.3. Support:

Place the base and top (part n° 1a and 1b) over each other with the support 250 x 15 x 15mm (part n° 2) in between (do not glue).

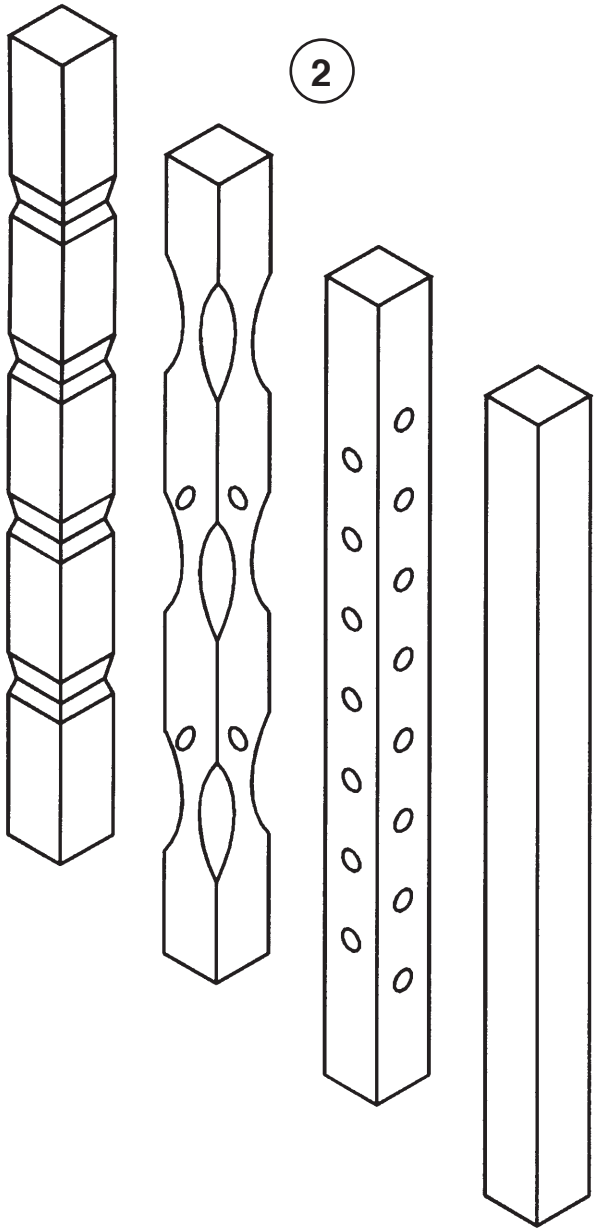
Shorten the support until the biro stands upright under the influence of the magnet but is not hanging from the magnet.

Then you can design the shape of the support as you wish.

Here are a few ideas to get you started.

(You can also shorten the strip for an easier version).

Design ideas:



6. Montage:

Glue the magnet ø 15 x 6 mm in the holder.
Glue base and top (part n° 1a and 1b) to the support.
(For the an easier version glue the support (part n° 2) to the base and holder).