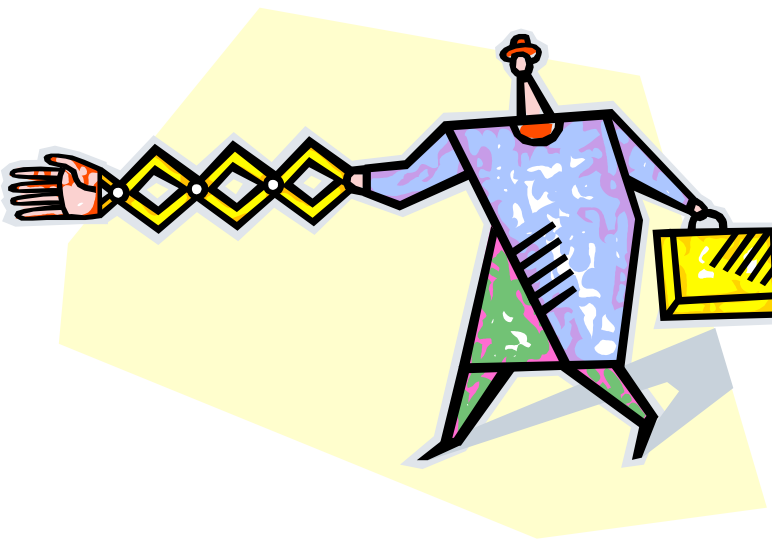




**centre de  
développement  
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*pour la formation générale  
en science et technologie*

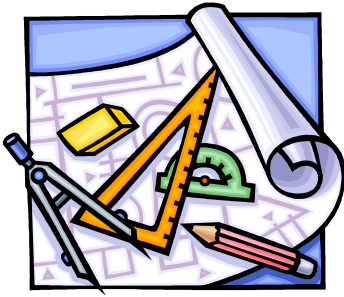
## **The articulated arm** (Musculoskeletal system)



**Task conceived for training purposes**  
**Introduction to the TECHNOLOGICAL WORLD**  
**Compulsory concepts: the language of lines**  
**ST and AST Programs.**

**Working document**

September 2007



## Context:

Your engineering firm receives a technical file and drawings for a prosthetic forearm and hand from BESTARM, another engineering firm. You must design the part that includes the fingers.

## Instructions:

1. Find a name for your engineering firm and write it on page 6 in the appropriate section.
2. Study the technical file supplied by BESTARM. (Exploratory questionnaire on principles diagrams and fork drawings.)
3. Following this study, suggest solutions track. (Follow the steps required in the booklet on pages 3 and 4)
4. Draw your final solution (page 5 : draft, page 6: final)
5. Produce your final solution from your drawing. (Complete the table, page 7)
6. Test the solution (complete the table, page 8)



NOTE: BESTARM is currently manufacturing its part of the prosthesis from the technical file and will eventually deliver their prototype so you can affix your prosthesis to theirs.

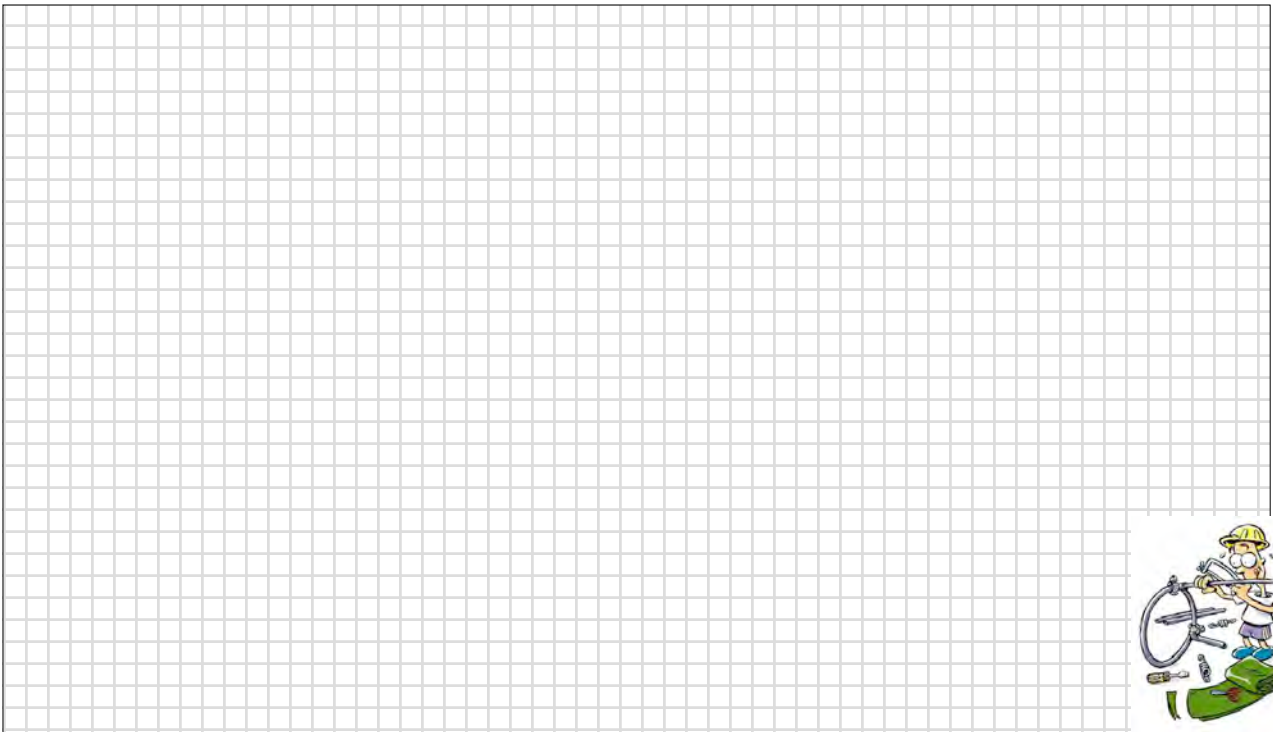
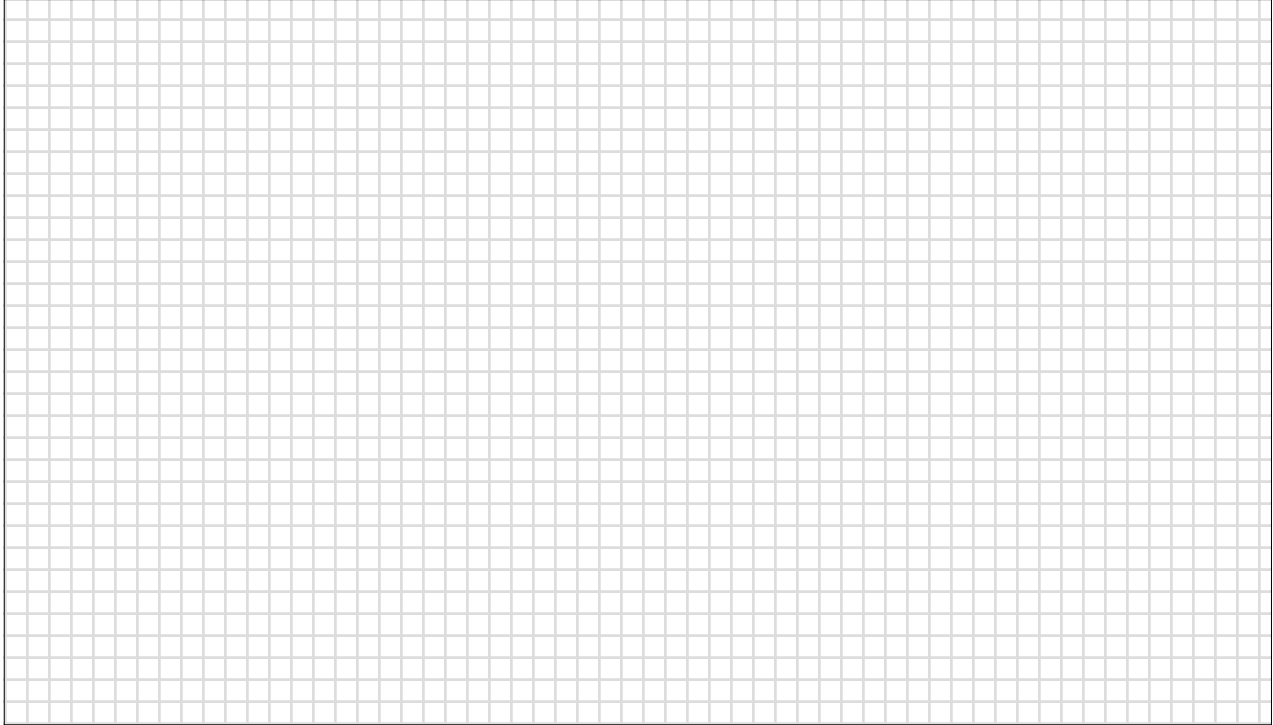
## DESIGN STAGES FOR THE ARTICULATED ARM

1. Outline my problem in relation to my technical file and specifications. Take into account the available resources. I resume what has to be done.



2. *What will my plan of action be to respond to this mandate?*

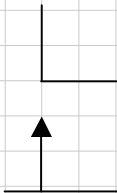
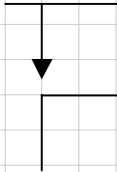
**MY IDEAS, in the form of sketches and text, to help design my prosthesis.**



**3. On the following page, I reproduce the fork in top and front views in 1:1 scale. I add the part that I must design using appropriate lines and dimensions. I use drawing instruments.**

*DRAFT*

Beginning of the top view

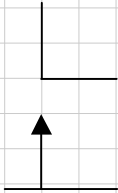
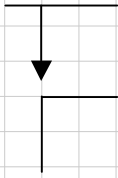


Beginning of the face view

One square = 5mm

YOUR FIRM	TITLE: CONTRACT 4527 BESTARM		
	NAME: <b>TECHNICAL DRAWING OF THE FINGERS PART</b>		
	DATE	SCALE: 1 = 1	GROUP:

Beginning of the top view



Beginning of the face view

One square = 5mm

TITLE: CONTRACT 4527 BESTARM

NAME: **TECHNICAL DRAWING OF THE FINGERS PART**

DATE



SCALE: 1 = 1

GROUP:

**4. How will I go about building my prosthesis ?  
(Materials, links, guides, tools...)**

<b>Description of the stages I will follow to build my prosthesis</b>	<b>Construction problems and adjustments made while building my prosthesis</b>

**5. Testing my fingers prosthesis with the forearm model from BESTARM. Results obtained and improvements to be made. Justification in terms of original problem.**

 <p><b>Tests carried out and results obtained</b></p>	 <p><b>Improvements</b></p>

**6. I evaluate the technical drawing of a competing firm.**