

# Sequence n° 5: measuring using refraction

## ACTIVITY 1 : Refractometer

### Document 1: Abbe refractometer

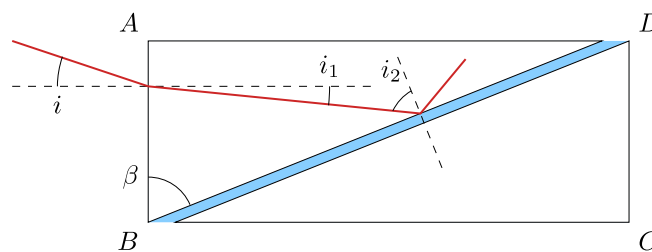
A refractometer is a laboratory or field device for the measurement of an index of refraction. The index of refraction is calculated from Snell's law.

The device is composed of two identical prisms made of glass (index  $n_0 = 1,732$ ).



### Document 2: Index measurement

A drop of liquid (with an unknown index of refraction,  $n$ ) is placed between the prisms. Angle  $\beta = 60^\circ$ .



Light is emitted through segment AB. No light is transmitted through segments BC or CD: all transmitted light goes through segment AD for a specific angle  $i = 18^\circ$ . Determine  $n$ .

**Your mission:** determine  $n$ , the index of refraction of the unknown liquid.

## Activity summary

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What you must remember:

- Refraction, reflection
- refractometer

Skills linked to the curriculum:

Compétences	Capacités à maîtriser
- ANA	<ul style="list-style-type: none"><li>- Définir l'indice de réfraction d'un milieu.</li><li>- Citer et exploiter les lois de Snell-Descartes.</li><li>- Établir et exploiter la relation entre l'angle de réfraction limite et les indices des milieux.</li><li>- Établir et exploiter les conditions de réflexion totale.</li></ul>
- COM	<ul style="list-style-type: none"><li>- Restituer ses connaissances à l'oral</li></ul>