Sequence n° 5: measuring using refraction

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 n0 = 1,732).**

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### ****Document 2: Index measurement****

### **A drop of liquid (with an unknown index of refraction, n) is placed between the prisms. Angle** $β=60°.$

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### **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°. Determine n.**

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

Activity summary

What you must remember:

* Refraction, reflection
* refractometer

Skills linked to the curriculum:

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| **Compétences** | **Capacités à maitriser** |
| * ANA
 | * Définir l’indice de réfraction d’un milieu.
* Citer et exploiter les lois de Snell-Descartes.
* Établir et exploiter la relation entre l'angle de réfraction limite et les indices des milieux.
* Établir et exploiter les conditions de réflexion totale.
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| * COM
 | * Restituer ses connaissances à l’oral
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