



# Sequence 7: interactions



**Fiche de synthèse mobilisée** (collection en français) :

- Fiche n°7 : quelques interactions et forces particulières



**Sommaire des activités ETLV :**

- ACTIVITY 1: Sky diving
- ACTIVITY 2: Analyzing speed during a skydive

## ACTIVITY 1: Sky diving

**Objective:** understanding forces

### DOCUMENT 1: Fluid friction or drag

Fluid friction describes the friction between layers of a viscous fluid that are moving relative to each other.

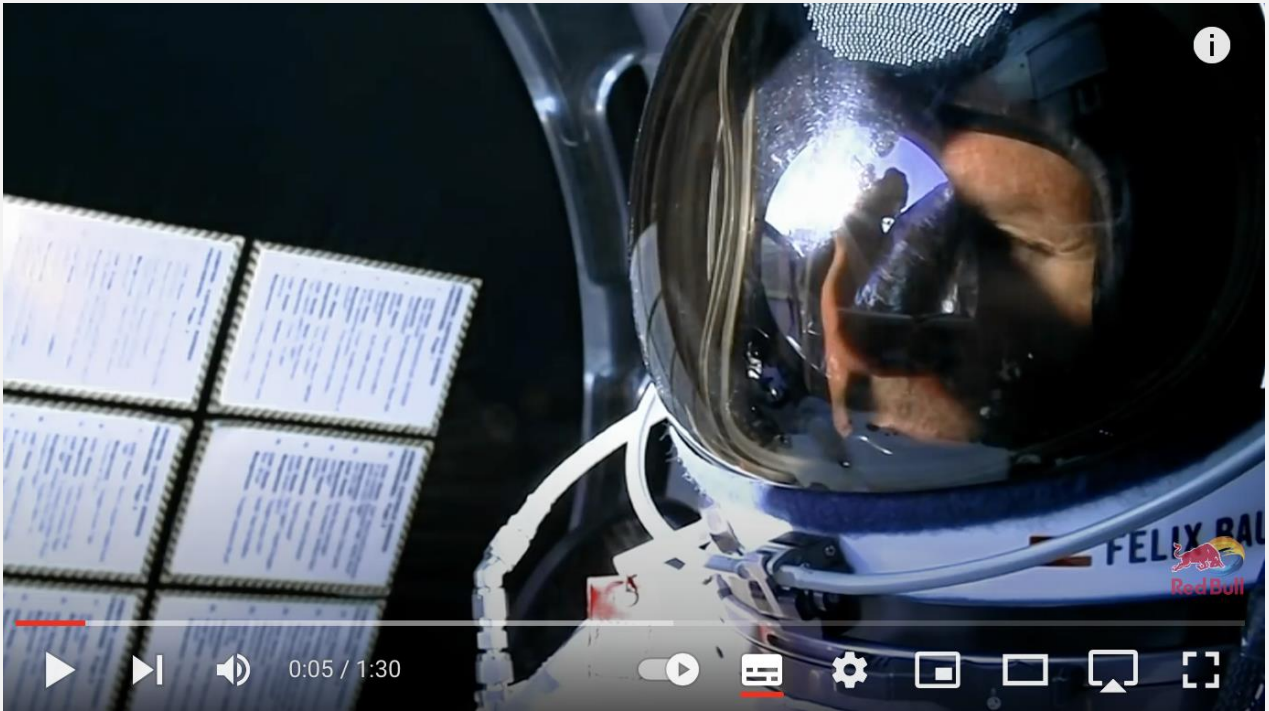
**Source:** Wikipedia

### DOCUMENT 2: Felix Baumgartner

Felix Baumgartner is an Austrian skydiver, daredevil and BASE jumper. He is best known for jumping to Earth from a helium balloon from the stratosphere on 14 October 2012 and landing in New Mexico, United States as part of the Red Bull Stratos project. Doing so, he set world records for skydiving an estimated 39 km, reaching an estimated top speed of 1,357.64 km/h, or Mach 1.25. He became the first person to break the sound barrier relative to the surface without vehicular power on his descent.

**Source:** Wikipedia (text and pictures)



**DOCUMENT 3: The skydive**

Source : <https://www.youtube.com/watch?v=FHtvDA0W34I&t=85s>

**■ Acquiring vocabulary:**

Watch the video, read the documents. Find a translation for the following expressions:

| English                    | French |
|----------------------------|--------|
| free fall                  |        |
| world record               |        |
| speed                      |        |
| breaking the sound barrier |        |

**■ Understanding:**

Represent Felix as a cross and draw the force(s) he is subjected to in the stratosphere (in the absence of air).

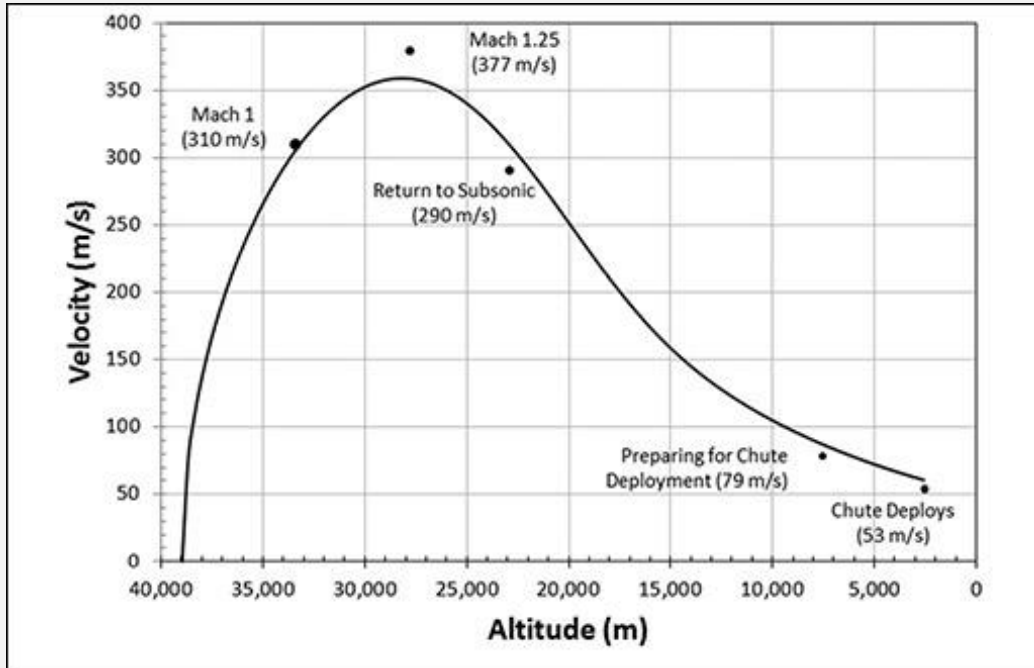
Represent Felix as a cross and draw the force(s) he is subjected to in the atmosphere (in the presence of air).



## ACTIVITY 2: Analyzing speed during a skydive

**Objective:** understanding changes in speed during a movement

### DOCUMENT 1: Speed during the skydive



**Source:** American Association of Teachers

#### ■ Presenting:

Prepare a short presentation during which you will explain the changes in speed during the skydive



# Activity summary

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What you must remember:

- **speed**
- **force**
- **friction or drag**

Skills linked to the curriculum:

| Compétences | Capacités à maîtriser   | Où dans cette séquence ? |
|-------------|---|--------------------------|
| APP         | <ul style="list-style-type: none"><li>• Utiliser du vocabulaire spécifique</li></ul>  | Activités 1 et 2         |
|             | <ul style="list-style-type: none"><li>• Lire et comprendre des documents scientifiques</li></ul>  | Activités 1 et 2         |
| COM         | <ul style="list-style-type: none"><li>• S'exprimer à l'écrit et à l'oral en utilisant le vocabulaire adapté</li></ul>   | Activité 2               |
| REA         | <ul style="list-style-type: none"><li>• Modéliser une action mécanique par une force.</li><li>• Établir un bilan de forces.</li><li>• Effectuer un bilan quantitatif de forces pour un système à l'équilibre ou en mouvement rectiligne uniforme.</li></ul> | Activité 1               |