



AVIVANCE

AVALANCHE TERRAIN ANALYSIS DEVICE

In current years it has become more common for outdoor enthusiasts to venture into the back country during the winter months. Whether this be to hunt, climb, or ski, Avalanching is a primary danger across all disciplines. Over the past 10 winters, an average of 27 fatalities each year have been recorded in the United States (Colorado Avalanche Information Centre, 2019).

Because of the relationship between terrain characteristics and avalanche zones, there are several tools used to minimise user's exposure to avalanche risk both above and below the snow pack. These range from primary devices such as compasses to crystal cards and snow tools used to analyse the snow pack below the surface. These current tools however are all separate from one another and it quickly becomes difficult to manage several tools while quickly analysing a slope.

This project aims to develop a device that integrates three of the most commonly used tools while analysis slopes above the snow including a compass, altimeter, and inclinometer. This will be done in a user-friendly manner that combats problems faced in the backcountry such as cold temperatures, and impacts. Using CAD modelling, 3D printing, CNC cutting, and testing, we were able to develop a device which encases these core values.

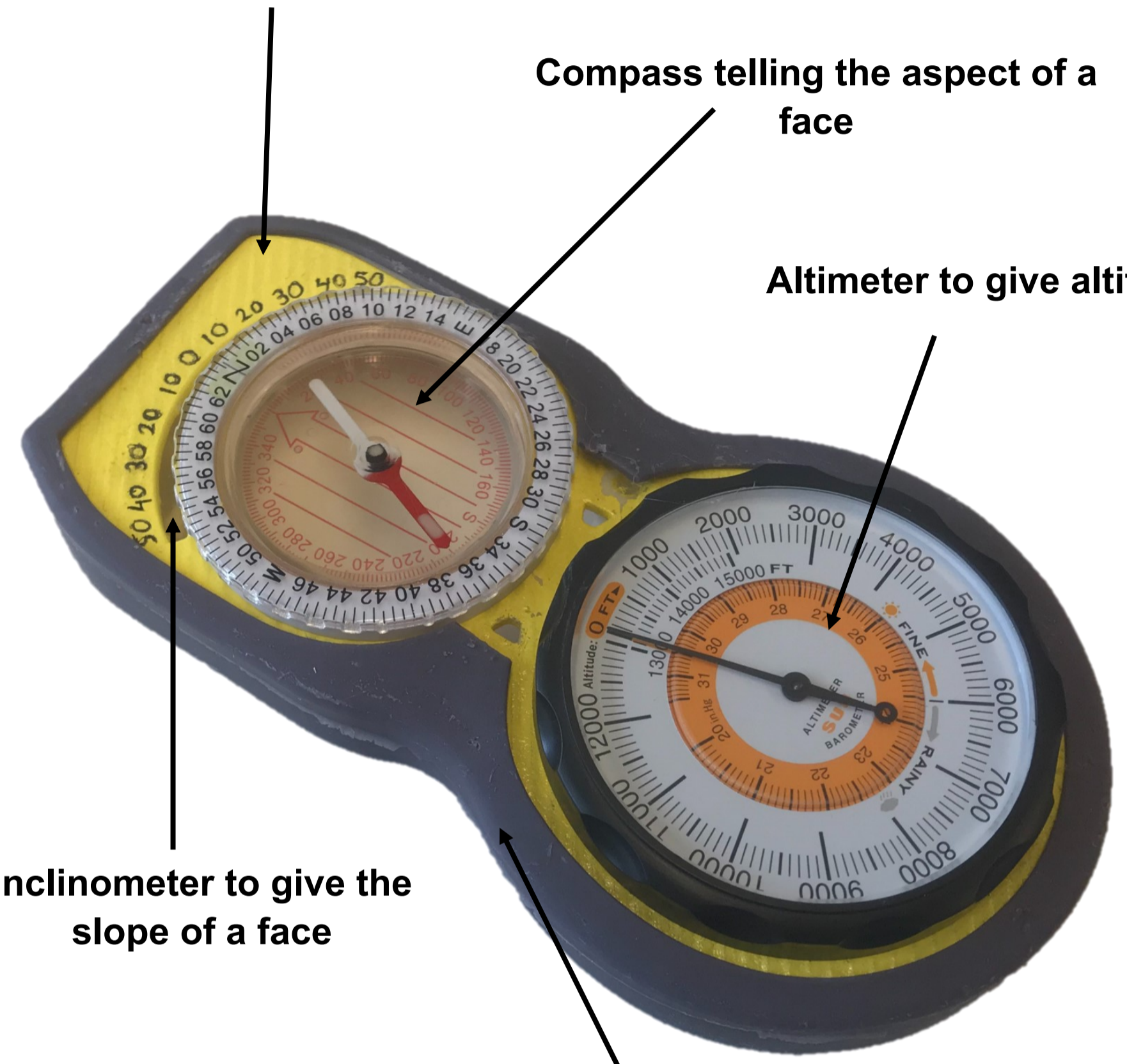
Yellow housing to be injection moulded, ergonomically designed with the user in mind.

Compass telling the aspect of a face

Altimeter to give altitude

Inclinometer to give the slope of a face

Silicone case to give the device a better feel and give shock proofing



This project meets the United Nations sustainable development goal three that is to promote good health and well-being, and 9 that is to promote industry, innovation, and infrastructure.

United Nations Sustainable goals
(United Nations 2020)

References

United Nations sustainability goals. (2020). <https://www.un.org/sustainabledevelopment/sustainable-development-goals/>
Colorado Avalanche Information Centre. (2019). Accidents: Statistics and Reporting. Retrieved from Colorado Avalanche Information Web Site: <https://avalanche.state.co.us/accidents/statistics-and-reporting/>



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