What makes a mathematical topic interesting?

Log-Gases and Random Matrices, P. Forrester (2010):

- Often it is asked what makes a mathematical topic interesting.
- Some qualities which come to mind are *usefulness, beauty, depth & fertility.*

1. *Usefulness* is usually measured by the utility of the topic outside mathematics.
2. *Beauty* is an alluring quality of much mathematics, with the caveat that it is often something only a trained eye can see.
3. *Depth* comes via the linking together of multiple ideas and topics, often seemingly removed from the original context.
4. And *fertility* means that with a reasonable effort there are new results, some useful, some with beauty, and a few maybe with depth, still waiting to be found.

Offen The background needed for studying the interesting topic is:

- Nothing
- Everything