A map projection is used to portray all or part of the round Earth on a flat surface. This cannot be done without some distortion. Every projection has its own set of advantages and disadvantages. There is no “best” projection. The mapmaker must select the one best suited to the needs, reducing distortion of the most important features.

Mapmakers and mathematicians have devised almost limitless ways to project the image of the globe onto paper. Scientists at the U.S. Geological Survey have designed projections for their specific needs—such as the Space Oblique Mercator, which allows mapping from satellites with little or no distortion. This document gives the key properties, characteristics, and preferred uses of many historically important projections and of those frequently used by mapmakers today.