Glossary

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Developable surface
A surface that can be flattened into a plane without stretching or tearing.

Dihedral angle (ρ)
The angle between the two facets meeting at a crease, measured in the ambient space. A crease in an unfolded sheet has $\rho = \pi$, not 0, and ρ decreases as the sheet folds. It is *derived* from θ and is never a synonym for it.

Folding parameter (θ)
The parameter of the folding map, and the difficulty axis of the whole book. $\theta = 0$ is the flat sheet, and the pattern folds monotonically as θ grows. It is a parameter, not an angle read off a figure; the map $\rho(\theta)$ from it to the dihedral angle is stated once per pattern in Chapter 2.

Isometry, intrinsic and ambient
An *intrinsic* isometry preserves distances measured **along** the surface. An *ambient* isometry preserves straight-line distance in the space the surface sits in. Rigid folding is the first and emphatically not the second: it contracts ambient distance strictly for every $\theta > 0$. Which of the two a method consumes is the distinction the book turns on, and the reason Chapter 9 reports two headline numbers rather than one.

Mountain / valley assignment
The direction of each crease. Written M and V; encoded by linetype as well as colour in every figure.

Reach
The largest r such that every point within r of the surface has a unique nearest point on it. Most manifold-learning guarantees are stated in terms of a positive reach; a creased surface has reach exactly zero, which is what puts these objects outside the theory rather than merely at its edge.

Rigid origami
Folding in which facets stay flat and all deformation happens at creases.

Short-circuit
Two points close in ambient space but far apart geodesically. The failure mode that breaks kNN-graph methods.