One-Point Perspective Teaching Audit

Expanded 87-source study of directional derivation, incomplete general explanation, and explicit conceptual error

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Research question. How often does one-point perspective teaching explain the general geometrical relationship between a particular parallel-line system, the eye-point or station point, its corresponding directional reference, the picture plane and the resulting vanishing point—and how often does it teach only the conventional central one-point configuration or introduce a conceptual error?

Important limitation. This is a purposive evidential audit, not a random sample of every perspective source in existence. Percentages describe the 87 sources inspected here and should not be presented as population prevalence. Institution names identify the specific public teaching resources examined, not a judgement that every course or teacher at that institution uses the same explanation.

Executive findings

Classification	Count	Share	Teaching result
A — general directional/ projection principle correctly explained	30	34.48%	General principle taught
B — conventional one-point construction taught; general principle omitted	49	56.32%	Usable but incomplete explanation
C — explicit conceptual conflation or overgeneralisation	8	9.20%	Conceptual error identified

Combined B + C: 57 of 87 sources (65.52%) did not provide the complete general explanation examined by the audit. Of these, 49 taught the conventional one-point construction without explaining the more general directional relationship, while 8 contained an explicit conceptual conflation or overgeneralisation.

- The strongest A sources are not merely historical. Modern architecture, mathematics, computer-graphics and computer-vision teaching at institutions including Princeton, MIT, Stanford, Oxford and Cambridge expresses the same direction-based principle.
- The largest concentration of B sources remains introductory art teaching: horizon line → place/choose a vanishing point → draw orthogonals. Under the criterion adopted here, this is classified as an incomplete general explanation when the special-case method is taught without explaining the more general relationship that determines the vanishing point.
- The C category remains deliberately conservative: it is used only where the inspected wording explicitly identifies distinct entities, attributes convergence to the wrong cause, or materially misstates why one-point perspective has one vanishing point.
- Some older authors use “sight line” for a variable ray through the eye deliberately made parallel to the relevant spatial line system. Functionally, that ray is direction-derived and is therefore classified A despite the terminology.

What the 87-source study supports

The enlarged audit supports the central conjecture. In central one-point perspective, the depth direction, the corresponding directional-reference line through the eye, and the central viewing axis can coincide. When teaching presents the resulting central one-point construction without identifying the more general relationship between spatial direction, eye-point or station point, directional reference and picture plane, the learner may receive a workable construction without the complete explanation of why its vanishing point occurs where it does.

Accordingly, this revision distinguishes a complete general explanation from an incomplete general explanation and from explicit conceptual error. The canonical one-point drawing can still be constructed correctly even where the broader explanation is incomplete or, in some cases, erroneous. The historical and modern technical A sources show that the direction-based rule is established geometry; the educational issue is whether the broader directional/projective relationship is actually explained.

Method and classification rules

Sources were located across historical books/manuals, university and technical teaching, school/museum education, and contemporary online tutorials. Seven additional high-profile university resources were then targeted: Harvard, Yale, Princeton, MIT, Stanford, Oxford and Cambridge. The inspected one-point or vanishing-point explanation was coded as follows:

- A — Correct directional explanation: explicitly locates the relevant vanishing point from the direction of the corresponding parallel family (for example, a ray through the eye/station point parallel to that family), or clearly derives one-point perspective from picture-plane orientation and direction sets.
- B — Incomplete general explanation: teaches or defines the standard horizon + single-vanishing-point construction as one-point perspective without explaining how that vanishing point is determined by the relationship between the spatial line-system direction, the eye-point or station point and the picture plane.
- C — Explicit conceptual error: identifies the vanishing point with viewpoint/station point/fixation, claims all sight-lines meet one vanishing point, reverses the causal relation between diminution and vanishing-point formation, or gives another materially erroneous rule about why one-point perspective has one vanishing point.

Coding principle: absence of the PRC terms “Directional Reference Line” or “Visual Element” is not itself an error. A source receives A whenever it teaches functionally equivalent geometry. The B classification depends on the explanatory role of the inspected material: it is used where the source purports to teach or define one-point perspective but omits the complete directional/projective relationship examined by the audit.

Pattern by source environment

Source environment	A	B	C	Total
Books / manuals / reference	12	2	0	14
University / technical teaching	18	8	3	29
Schools / museums / public education	0	19	0	19
Online art / drawing tutorials	0	20	5	25

Interpretive caution: the source environments were not sampled in proportion to their real-world market share; this table is descriptive of the audit set only. The added university sources were deliberately targeted to test whether the same issue appears in high-profile institutions.

Historical context: the directional rule is not new

Brook Taylor's New Principles of Linear Perspective (1719) belongs to the early English mathematical tradition that made vanishing points properties of spatial line directions, and later authors such as Ruskin express the construction explicitly: through the station point, draw a line parallel to the original line; its intersection gives the VP. The important research question raised by the present audit is therefore not whether the direction principle ever existed, but why it is so often absent from elementary modern explanations.

Historical reference (context, not separately counted in the 87): Sir John Soane's Museum catalogue — Brook Taylor, New Principles of Linear Perspective (1719)

Original 80-source evidence table

The following 80 rows preserve the original evidence set. Each row records the classification of the inspected perspective explanation, not a judgement on the overall quality of the source. The seven-university extension follows this table.

A — correct directional explanation (original sources)

#	Source	Type	Evidence / reason for classification	Ref.
1	John Ruskin, The Elements of Pers	Book / treatise	Explicitly constructs the vanishing drawing from the station point a lir the given spatial line.	Open source
2	G. A. Storey, The Theory and Pract Perspective	Book / treatise	Constructs vanishing points from tl point with lines parallel to the corr sides/directions in plan.	Open source
3	Joseph D'Amelio, Perspective Drav Handbook	Book / manual	Uses “sight lines” through the obse deliberately made parallel to each r object lines to locate its vanishing	Open source
4	Ernest Norling, Perspective Drawi	Book / manual	Locates vanishing points by runnin the eye to the picture plane parallel directions of the box.	Open source
5	Francis D. K. Ching, Architectural ed.	Book / textbook	States the general rule: the VP for a parallels is where a line from the st parallel to that set intersects the pic	Open source
6	Francis D. K. Ching, Design Draw	Book / textbook	Treats the vanishing point as belon specified direction/set of parallel li derives corresponding VPs from pr geometry.	Open source
7	Scott Robertson & Thomas Bertlin Draw	Book / manual	Uses a top-view “visual ray” metho line parallel to the spatial set throug point to find that set’s VP.	Open source
8	Complete Perspective Course	Historical book / manual	Uses a “directing” line from the sta parallel to the relevant direction an the resulting VP for all lines paralle system.	Open source
9	The Essentials of Perspective	Historical book / manual	Relates station point and vanishing through the geometry of parallel di rather than treating a chosen centra general cause.	Open source
10	Architectural Sketching and Drawi Perspective	Historical book / manual	Draws lines through the eye paralle diagonals to meet the horizon at the corresponding VP/DVP.	Open source
11	A Dictionary of Architecture and B Perspective entry	Reference work	Defines the VP by a projector throu point parallel to the given line; the serves all lines parallel to it.	Open source
12	SP 46: Engineering Drawing Practi Schools and Colleges	Technical standard / manual	States that the intersection of the ap parallel projection ray with the pro gives the VP for all lines parallel to line.	Open source
13	CUNY City Tech, Creative Perspec One-Point Perspective	University teaching	Projects the VP from the station po parallel to the plan/direction before it to the horizon.	Open source
14	Carnegie Mellon University, Centr	University / technical teaching	Explicitly states that a family’s VP line through the station point in tha of parallel lines pierces the picture	Open source
15	University of Utah, Mathematics o Drawing	University / mathematics	Explains one-point perspective as a in which only one object-axis direc parallel to the drawing plane and th finite VP.	Open source
16	University of Illinois, Horizon and	University / mathematics	Defines the eye ray of a spatial line through the eye parallel to it; its int with the canvas is that line’s VP.	Open source

#	Source	Type	Evidence / reason for classification	Ref.
17	University of Illinois, Linear Persp	University / mathematics	Treats VPs as direction-dependent: parallel lines share a VP; lines para picture plane remain parallel.	Open source
18	UC Berkeley CS184, Perspective / Points	University / computer graphics	Explains VP formation by the orien bundles of spatial parallels relative imaging plane; bundles parallel to t have no finite VP.	Open source
19	California State University Northri Perspective notes	University / mathematics	Explains one-point as the special ca of three parallel direction sets are p picture plane, leaving one finite VP	Open source
20	University of New Mexico, Perspe	University / computer graphics	Separates parallel sets by their relat view plane: parallel-to-plane sets re parallel; others converge to VPs.	Open source
21	University of Wisconsin, Image Fo Vanishing Points	University / computer vision	States that the ray from the camera through a VP is parallel to the corre spatial lines.	Open source
22	Cornell University, Single-View M Vanishing Points	University / computer vision	Uses line direction vectors and poin to derive VPs; multiple spatial dire produce multiple VPs.	Open source
23	Open University / OpenLearn, Typ Perspective	University public teaching	Explains one-point as an orientatio parallel to the picture plane stay pa the right-angle depth direction rece VP.	Open source
24	Perspective Resources, Principles	Technical perspective resource	Establishes each VP by moving a s parallel to the relevant grid directio viewpoint until it meets the picture	Open source
25	Wikipedia, Vanishing point — tech overview	Reference / technical overview	Defines VPs by spatial direction an the sightline through the VP is para direction; identifies one-point as th perpendicular-to-picture-plane spec	Open source

B — incomplete general explanation (original sources)

#	Source	Type	Evidence / reason for classification	Ref.
26	Lemoore College, Drawing Perspe 2	Open textbook	Inspected one-point section begins line, then defines/places a VP and c object to it; no station-point/directi is given.	Open source
27	Bakersfield Museum of Art, Art Pr Perspective	Museum education	Defines one-point as convergence t single VP on the horizon and teach standard special-case construction deriving that VP from spatial direct	Open source
28	Museum of Latin American Art (M Point Perspective	Museum education	Procedure: draw horizon, draw one anywhere on it, draw a square, con to VP. Operationally useful, but the cause is omitted.	Open source
29	University of Evansville Studio Ch Seeing One Point Perspective	University art teaching	Finds perspective by extending visi lines until they converge near the c general construction from spatial d through the eye is supplied.	Open source
30	Studio Matrx, One-Point Perspecti Drawing Fundamentals	Online / design teaching	Tells learners to draw a horizon, m then connect a back-wall rectangle special construction is taught witho general direction rule.	Open source
31	Westmoreland Museum of Americ Point Perspective Drawing	Museum education	Identifies horizon and VP from con in an example, then transfers horiz a drawing; no direction-through-ey	Open source
32	District of Columbia Visual Arts St glossary	School standards	Defines one-point as lines appearin single point on the horizon. It gives not the geometrical derivation.	Open source
33	Getty Education, Pearblossom Hig perspective lesson	Museum / teacher resource	Asks pupils to identify horizon, VP meeting there in one-point images; underlying spatial direction constru absent.	Open source
34	DIY.org, Draw in Perspective	Online youth tutorial	States that all receding lines in one one VP on the horizon, with no exp why that particular line system has	Open source
35	Mennello Museum, One-Point Pers Family Funday	Museum education	Step sequence begins horizon acros at centre, then radiating vanishing l Directional reference construction	Open source
36	Oak National Academy, One Point KS3	School curriculum	Frames horizon line and VP as the starting elements for one-point dra inspected lesson does not derive th spatial direction.	Open source
37	Student Art Guide, One Point Persp Drawing: The Ultimate Guide	Online art education	Emphasises correct positioning of l and construction toward that VP, bu inspected one-point guidance does VP from the line-system direction.	Open source
38	Mrs. Chehrehsa Visual Arts, One-P Perspective	School / online art teaching	House exercise: draw front wall, ac place VP on it, then guide corners t special-case recipe is presented wit general directional principle.	Open source
39	Ran Art Blog, Perspective Drawing	Online tutorial	Depth lines are instructed to meet a and rooms begin with horizon + on is operationally given rather than d derived.	Open source

#	Source	Type	Evidence / reason for classification	Ref.
40	Drawing Week Brussels, Perspectiv Tutorial	Online tutorial	Procedure explicitly says draw hor VP (usually centred/off-centre), the orthogonals from it; no station-poi construction.	Open source
41	Clip Studio Tips, Can you better dr three-dimensionality?	Online tutorial	Treats horizon/eye level and VP as setup for depth; the inspected expla not establish VPs from specific spa directions.	Open source
42	BibleMouse, Horizon Line and Var	School / online curriculum	Defines VP as where parallels appe and practises a road/hallway with h no general directional-reference de	Open source
43	Arts Impact, Grade 8 One-Point Pe	School lesson plan	Defines one-point by one VP on the with a face parallel to the viewer; t special configuration but does not e reference-line construction.	Open source
44	Primary School Art, One Point Per Bedroom	School lesson	Teaches horizon, VP and convergin basics and practises shapes above/b horizon; direction-of-system geom omitted.	Open source
45	Art Projects for Kids, City with On Perspective	Online / school tutorial	Uses a single VP on the horizon as destination of tops/sidewalk guides construction of that VP from the re direction.	Open source
46	Erika Lancaster, Drawing a Room Point Perspective	Online tutorial	Uses the standard one-point grid ar for non-front-facing depth lines; no through-eye parallel construction is	Open source
47	Clip Studio Tips, Basic Perspective Vanishing Points and Simple Backg	Online tutorial	Starts by placing the horizon, then where desired and connects recedin This is the shortcut procedure.	Open source
48	Courtney Marie Taylor, Landscape One Point Perspective	Online tutorial	Step 1 is horizon + central VP; Step diagonals from VP to corners. No c derived VP explanation.	Open source
49	HelloArtsy, One Point Perspective	Online tutorial	Step 1 draws horizon; Step 2 places later construction is drawn back to The reason for that VP is not derive	Open source
50	Muus Art, 4 Easy Steps for One Po Perspective	Online tutorial	Asks the learner to decide where th the horizon, then uses it for orthog Parallel-line appearance is mention station-point directional constructio	Open source
51	Artistic Designers, Mastering One- Perspective	Online tutorial	Procedure: draw horizon, select a s it, make parallels converge to that s General direction-dependent deriva absent.	Open source
52	Domestika, What Is the Vanishing How to Use It?	Online art education	Explains convergence toward a cen the horizon as a depth tool, but doe each VP from the direction of its pa	Open source
53	Study.com, One Point Perspective	Online lesson	Tells artists to create the horizon ar the VP on it; says VP may be anyw horizon. No line-system directiona is given.	Open source
54	Alabama Art Supply, Perspective D Series — One-Point	Online art lesson	Explains front-on orientation, but t the learner simply to choose one po horizon as VP and construct depth	Open source

#	Source	Type	Evidence / reason for classification	Ref.
55	Drawing and Painting (Wix), One- Perspective	Online art lesson	Establishes eye-level horizon and t anywhere along it, followed by line the square. Directional derivation i	Open source
56	Grid Maker Pro, One Point Perspec	Online technical drawing tool	Explains a back wall, horizon and s draggable VP; gives useful distanc information but does not make the arise from a line through the eye pa depth system.	Open source
57	XPPen, Perspective Drawing for B	Online tutorial	Links one-point to a single horizon lines converge there; the directiona mechanism is not supplied.	Open source
58	Pia's Art Blog, One Point Perspecti	School / student-facing resource	Uses central/principal VP/centre-of terminology and a direction point, l inspected instruction does not deriv from a line through the eye parallel system.	Open source
59	Craftsy, The Basics of Three Point (one-point recap)	Online art tutorial	Recaps one-point as vertical/horizo plus lines receding to one VP; this special-case rule rather than the ge derivation.	Open source
60	Brigham Young University–Idaho A Basic Perspective: Converging Lin	University art teaching	Explains apparent convergence to a point on eye level/horizon and attri diminution; it does not construct th spatial direction.	Open source
61	Art Institute of Chicago archive, W Perspective?	Museum / education archive	Gives horizon, VP and distance-po relationships, but the inspected mat make the vanishing point a directio intersection through the eye.	Open source
62	Brigham Young University–Idaho A Photograph exercise	University art exercise	Asks students to draw the eye level corresponding to each photo. Usefu analysis, but not a derivation of VP direction.	Open source
63	University of Houston teacher reso on Geometry / Perspective	University teacher resource	Describes parallel edges appearing on the horizon and uses one-point c pedagogy; the directional-reference is not the explanatory focus.	Open source
64	San José State University, Drawing	University art teaching	Defines one-point as receding lines at one VP on eye level/horizon. It g visible result but not the reference- derivation.	Open source
65	KuraPlan, Observing and Perspecti	School lesson plan	Teacher demonstration uses horizo marked VP, then connects box edg direction-derived construction is in	Open source
66	SlideShare, One Point Perspective	Online presentation	Defines one-point as parallel lines r toward one VP on the horizon. The mechanism for locating VPs by dir omitted.	Open source
67	Life Drawing Academy, 16 Types o	Online art education	Introduces one-point as a single VP horizon with vanishing lines conve no station-point directional constru	Open source
68	Cleveland Museum of Art, Perspec	Museum education	Instructs learners to put a dot/X in the horizon line as the VP and use i lines. The special-case recipe is tau	Open source

#	Source	Type	Evidence / reason for classification	Ref.
69	Grinnell College Museum of Art, C Perspective: Piranesi	Museum education	Lets the learner choose a VP (demc centrally), then treats most one-poi intersecting it. Directional derivatic	Open source
70	Contemporary Art Museum St. Lou Perspective activity	Museum education	Basic steps: draw horizon, mark VI construct a street scene. No line-sy reference construction is supplied.	Open source
71	Ashmolean Museum, Focus on Per Art — teacher notes	Museum / teacher resource	Lists horizon and one/more VPs an one-point as a single VP; the gener through-eye location rule is not sta inspected notes.	Open source
72	Academy of Art University, Grade Perspective Architecture	School lesson plan	Sets up the directed drawing with h and construction lines. The VP is a rather than directionally derived.	Open source

C — explicit conceptual error (original sources)

#	Source	Type	Evidence / reason for classification	Ref.
73	University of California Riverside, Landscape in One-Point Perspectiv	University outreach lesson	Says "all of our sight-lines" meet a VP and describes that point as the s which perspective lines grow. This sight-line behaviour with the line-s	Open source
74	West Dean College, Perceptual Ski Drawing	College teaching resource	Explicitly identifies the vanishing p artist's "Point of View fixed on the Line," conflating distinct geometric	Open source
75	Craftsy, Drawing a One-Point Pers	Online art tutorial	States that the VP "will represent th point of view." In geometrical cons viewpoint/eye-point and VP are dis	Open source
76	Concepts App, Learn to Draw Part	Online drawing course	Calls the VP the "focal point of you has perspective lines recede to it, e identification of the chosen VP with fixation rather than the line-system	Open source
77	Haydn Symons, Complete Perspec	Online art tutorial	Claims that moving the one-point V the centre may effectively turn the two-point perspective. Off-centre p alone does not create a second spat VP.	Open source
78	My Drawing Tutorials, One Point I Definition	Online art tutorial	Claims an object can be in one-poi the middle of the observer's field o becomes two-/three-point as it mov centre. Point count is determined b direction sets, not simply retinal po	Open source
79	My Drawing Tutorials, Vanishing I Horizon / Cone of Vision	Online art tutorial	Explains VPs as being created beca get smaller with distance until they into a VP. This reverses or confuses with the geometrical direction-base of a VP.	Open source
80	Bellevue College, Traditional Type Indication	College art resource	The glossary gives the vanishing p point where converging parallels m appends "(station point)," directly with the observer/station point.	Open source

High-profile university extension: sources 81–87

Seven additional public teaching resources were targeted specifically to include Harvard, Yale, Princeton, MIT, Stanford, Oxford and Cambridge. The classifications below apply only to the named resource inspected; they must not be read as a claim about every perspective course or teacher at the institution.

#	Source	Classification	Evidence / reason for classification	Ref.
81	Harvard University — A Guide to Writing in Art History (Harvard Writing Project / History of Art and Architecture)	B — incomplete general explanation	Defines linear perspective as organising an image around a central vanishing point, with objects becoming smaller near the horizon; it does not state the direction-of-parallel-system principle that determines the vanishing point.	Ref. 81
82	Yale-New Haven Teachers Institute — The Illusion of the Renaissance	B — incomplete general explanation	A studio-art curriculum explicitly designed to teach perspective rules instructs students to determine a vanishing point “anywhere” in the construction rectangle and draw orthogonals from it, without deriving the point from the spatial line-system direction.	Ref. 82
83	Princeton University COS 429 — Lecture 2: Image Formation and Capture	A — correct directional explanation	States that each direction in space has its own vanishing point, that the vanishing point is uniquely determined by direction, and constructs it by shooting a ray from the camera centre along that same direction to the image plane.	Ref. 83
84	MIT 6.869 — Image Formation lecture notes (2022)	A — correct directional explanation	States that each set of parallel lines — explicitly equated with a direction — meets at a different vanishing point, identified as the vanishing point for that direction.	Ref. 84
85	Stanford University CS231A — Single-View Metrology lecture notes	A — correct directional explanation	Defines the vanishing point as the projected point at infinity associated with a 3D line direction and gives the relationship $v = Kd$, where d is the direction of the parallel-line family.	Ref. 85
86	University of Oxford AIMS CDT — Exercises from Lecture 3 (HT 2017)	A — correct directional explanation	Requires students to derive the image coordinates of the vanishing point of a family of lines parallel to a specified parametric 3D line, directly tying the point to the family’s spatial direction.	Ref. 86

#	Source	Classification	Evidence / reason for classification	Ref.
87	University of Cambridge Engineering Tripos Part IIB 4F12 — Computer Vision and Robotics	A — correct directional explanation	Derives the vanishing point of lines parallel to the world X-axis from the camera projection matrix, explicitly making the vanishing point a property of a specified spatial direction.	Ref. 87

University-only findings

Across the enlarged audit there are 25 university-affiliated teaching sources representing 23 institutions. Sixteen of 25 (64%) provide the general direction-based explanation; 8 of 25 (32%) provide an incomplete general explanation; and 1 of 25 (4%) contains an explicit conceptual error. Combined, 9 of 25 university-affiliated sources (36%) do not provide the complete general explanation examined by the audit.

Within the seven newly added high-profile resources, Princeton, MIT, Stanford, Oxford and Cambridge are classified A, while the specific Harvard resource and the Yale-New Haven Teachers Institute resource are classified B. Thus 2 of the 7 added resources (28.57%) do not provide the complete general explanation. Four Ivy League or Ivy-affiliated resources are represented in the full audit — Cornell, Harvard, Princeton and the Yale-New Haven Teachers Institute resource — with two A and two B results. These figures describe the audited resources only, not institution-wide teaching practice.

References and URLs — 87-source audit

All URLs were accessed for this audit on 12 August 2026. Where a source is a digitised historical book, the linked scan/text is the working research copy used for inspection. The seven added university resources are listed as references 81–87.

1. John Ruskin, The Elements of Perspective — https://www.gutenberg.org/files/60816/60816-h/60816-h.htm

2. G. A. Storey, The Theory and Practice of Perspective — https://www.gutenberg.org/files/20165/20165-h/20165-h.htm

3. Joseph D'Amelio, Perspective Drawing Handbook — https://dn790003.ca.archive.org/0/items/PerspectiveDrawingHandbook_201903/Perspective%20Drawing%20Handbook_text.pdf

4. Ernest Norling, Perspective Drawing (1969) — https://archive.org/stream/perspective-drawing-by-ernest-norling-walter-foster-1969/Perspective%20Drawing%20by%20Ernest%20Norling%20-%20Walter%20Foster%2C%201969_djvu.txt

5. Francis D. K. Ching, Architectural Graphics, 6th ed. — https://archive.org/stream/FrancisD.K.ChingArchitecturalGraphics6thEd2015/Francis%20D.%20K.%20Ching%2C%20Architectural%20Graphics%2C%206th%20Ed%20%5B2015%5D_djvu.txt

6. Francis D. K. Ching, Design Drawing, 2nd ed. — https://archive.org/stream/FrancisD.K.ChingDesignDrawing2ndEd2010/Francis%20D.%20K.%20Ching%2C%20Design%20Drawing%2C%202nd%20Ed%20%5B2010%5D_djvu.txt

7. Scott Robertson & Thomas Bertling, How to Draw — https://archive.org/stream/how-to-draw-drawing-and-sketching-objects-and-environments-from-your-imagination-pdfdrive.com/How%20to%20Draw%20%20drawing%20and%20sketching%20objects%20and%20environments%20from%20your%20imagination%20%28%20PDFDrive.com%20%29_djvu.txt

8. Complete Perspective Course — https://archive.org/download/completeperspect00spanuoft/completeperspect00spanuoft.pdf

9. The Essentials of Perspective — https://archive.org/download/essentialsofpers00mill/essentialsofpers00mill.pdf

10. Architectural Sketching and Drawing in Perspective — https://archive.org/download/cu31924014081263/cu31924014081263.pdf

11. A Dictionary of Architecture and Building — Perspective entry — https://archive.org/stream/adictionaryarch03sturgoog/adictionaryarch03sturgoog_djvu.txt

12. SP 46: Engineering Drawing Practice for Schools and Colleges — https://archive.org/stream/gov.in.is.sp.46.2003/is.sp.46.2003_djvu.txt

13. CUNY City Tech, Creative Perspective — Ch. 4 One-Point Perspective — https://openlab.citytech.cuny.edu/woolley-comd1103fa17/files/2016/10/Creative-Perspective-CH4.pdf

14. Carnegie Mellon University, Central Projections — https://www.andrew.cmu.edu/user/ramesh/teaching/course/48-175/lectures/11.CentralProjections.pdf

15. University of Utah, Mathematics of Perspective Drawing — https://www.math.utah.edu/~treiberg/Perspect/Perspect.htm

16. University of Illinois, Horizon and Zenith — https://new.math.uiuc.edu/public403/perspective/alberti/horz.html

17. University of Illinois, Linear Perspective — https://new.math.uiuc.edu/public403/perspective/alberti/alberti.html

18. UC Berkeley CS184, Perspective / Vanishing Points — https://people.eecs.berkeley.edu/~sequin/CS184/LECT_2011/L20.html

19. California State University Northridge, Perspective notes — https://www.csun.edu/~ac53971/pump/20100330_perspective.pdf

20. University of New Mexico, Perspective Viewing — https://www.cs.unm.edu/~joel/cs413/notes/CS-413-Chapter8-PerspectiveViewing.pdf

21. University of Wisconsin, Image Formation / Vanishing Points — https://pages.cs.wisc.edu/~dyer/cs534/slides/07-image-formation.pdf

22. Cornell University, Single-View Modeling / Vanishing Points — https://www.cs.cornell.edu/courses/cs5670/2021sp/lectures/lec12_singleview_for_web.pdf

23. Open University / OpenLearn, Types of Perspective — https://www.open.edu/openlearncreate/mod/page/view.php?id=156209

24. Perspective Resources, Principles — https://perspectiveresources.blogspot.com/p/principles.html

25. Wikipedia, Vanishing point — technical overview — https://en.wikipedia.org/wiki/Vanishing_point

26. Lemoore College, Drawing Perspectives Volume 2 — https://lemoorecollege.edu/oer/documents/final-draft-art-005b-digitalpdf.pdf

27. Bakersfield Museum of Art, Art Project: Perspective — https://www.bmoa.org/art-project-perspective

28. Museum of Latin American Art (MOLAA), 1 Point Perspective — https://molaa.org/resource-type/2024/5/28/1-point-perspective

29. University of Evansville Studio Chalkboard, Seeing One Point Perspective — https://studiochalkboard.evansville.edu/lp-seeing.html

30. Studio Matrx, One-Point Perspective — Drawing Fundamentals — https://www.studiomatrx.org/students/drawing-fundamentals/one-point-perspective

31. Westmoreland Museum of American Art, One-Point Perspective Drawing — https://thewestmoreland.org/blog/art-making-project-one-point-perspective-drawing/

32. District of Columbia Visual Arts Standards — glossary — https://osse.dc.gov/sites/default/files/dc/sites/osse/publication/attachments/Arts_Standards_2008_OCR_part%202.pdf

33. Getty Education, Pearblossom Highway perspective lesson — https://www.getty.edu/education/teachers/classroom_resources/curricula/arts_lang_arts/a_la_lesson24.html

34. DIY.org, Draw in Perspective — https://www.diy.org/challenges/draw-in-perspective

35. Mennello Museum, One-Point Perspective Family Funday — https://www.mennellomuseum.org/Education/Free-Family-Funday-Archive/March-2025

36. Oak National Academy, One Point Perspective KS3 — https://www.thenational.academy/teachers/programmes/design-technology-secondary-ks3/units/communication/lessons/one-point-perspective

37. Student Art Guide, One Point Perspective Drawing: The Ultimate Guide — https://www.studentartguide.com/articles/one-point-perspective-drawing

38. Mrs. Chehrehsa Visual Arts, One-Point Perspective — https://www.artschoool.ca/art-making-techniques/drawing/one-point-perspective

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Homepage replacement: 87-source audit

Suggested replacement table and text for the PRC homepage. Percentages refer to the audited sources only and are not population estimates.

Teaching approach	Sources	Percentage	Teaching result
General directional/projection principle correctly explained	30	34.48%	General principle taught
Conventional one-point construction taught, but general principle omitted	49	56.32%	Usable but incomplete explanation
Explicit conceptual conflation or overgeneralisation	8	9.20%	Conceptual error identified
Complete general explanation not provided	57 of 87	65.52%	Incomplete or erroneous explanation

An expanded audit of 87 treatises, textbooks, university and school teaching sources, and online instructional materials found that 30 of 87 (34.5%) provided the complete general directional/projective explanation examined here. The remaining 57 of 87 (65.5%) did not: 49 taught the conventional central one-point construction without the more general explanation, while 8 contained an explicit conceptual conflation or overgeneralisation.

A learner may therefore be able to construct a correct one-point image while receiving an incomplete—or, in some cases, erroneous—explanation of why it works.

University teaching

University teaching showed the same divide. The enlarged audit contains 25 university-affiliated perspective or vanishing-point teaching sources from 23 institutions; 9 of 25 (36%) did not provide the complete general explanation—eight through omission of the broader relationship and one through explicit conceptual error. In the seven newly targeted high-profile resources, Princeton, MIT, Stanford, Oxford and Cambridge teach the direction-based geometry correctly, while the specific Harvard and Yale-New Haven Teachers Institute resources inspected omit the complete general relationship examined here.

Four Ivy League or Ivy-affiliated resources are represented in the audit — Cornell, Harvard, Princeton and the Yale-New Haven Teachers Institute resource — with two complete-general-explanation and two incomplete-general-explanation results. These classifications apply only to the specific public resources examined, not to all teaching at those institutions.

Research implications for the PRC argument — revised 87-source audit

- The enlarged audit strengthens the evidence that the pedagogical issue is systematic rather than anecdotal: the horizon + chosen-vanishing-point model is widespread across introductory teaching, and the added university extension shows that incomplete general explanations also appear in high-profile academic resources.
- The revised terminology should still be used with source-level precision. B means that the conventional construction is taught but the complete general directional/projective explanation is not provided; C is reserved for an explicit conceptual error. Neither classification should be inflated into a claim that an entire institution teaches perspective incorrectly on the basis of one audited resource.
- The historical and technical A sources demonstrate that the general direction principle is established geometry. The PRC contribution can therefore be framed around recovering, naming, systematising and generalising that principle — and showing how the special one-point coincidence can conceal it in elementary teaching.
- A future publishable study should pre-register a search protocol, define inclusion/exclusion rules, sample by date and source type, and ideally use a second independent coder. The present 87-source audit is strongest as an evidential and comparative study, not a population estimate.

Bottom line. In this 87-source audit, 30 sources (34.48%) provide the complete general direction-based geometry examined here, 49 (56.32%) teach the conventional one-point construction without the complete general explanation, and

8 (9.20%) contain an explicit conceptual error. Thus 57 of 87 sources (65.52%) do not provide the complete general explanation examined by the audit. Within the university-only subset, 9 of 25 sources (36%) do not provide the complete general explanation.