

PART 1 | BACKGROUND AND DEFINITIONS

Measure clearly, report carefully

A narrative guide to distance visual acuity, screening records, and the rest of an eye exam.

Imagine a clinic team setting up a vision station. A fictional adult, Case FOCUS, says, "I can read the big letters. The smaller ones are harder." Your first job is to make the measurement fair. Your second is to describe what it shows without guessing why.

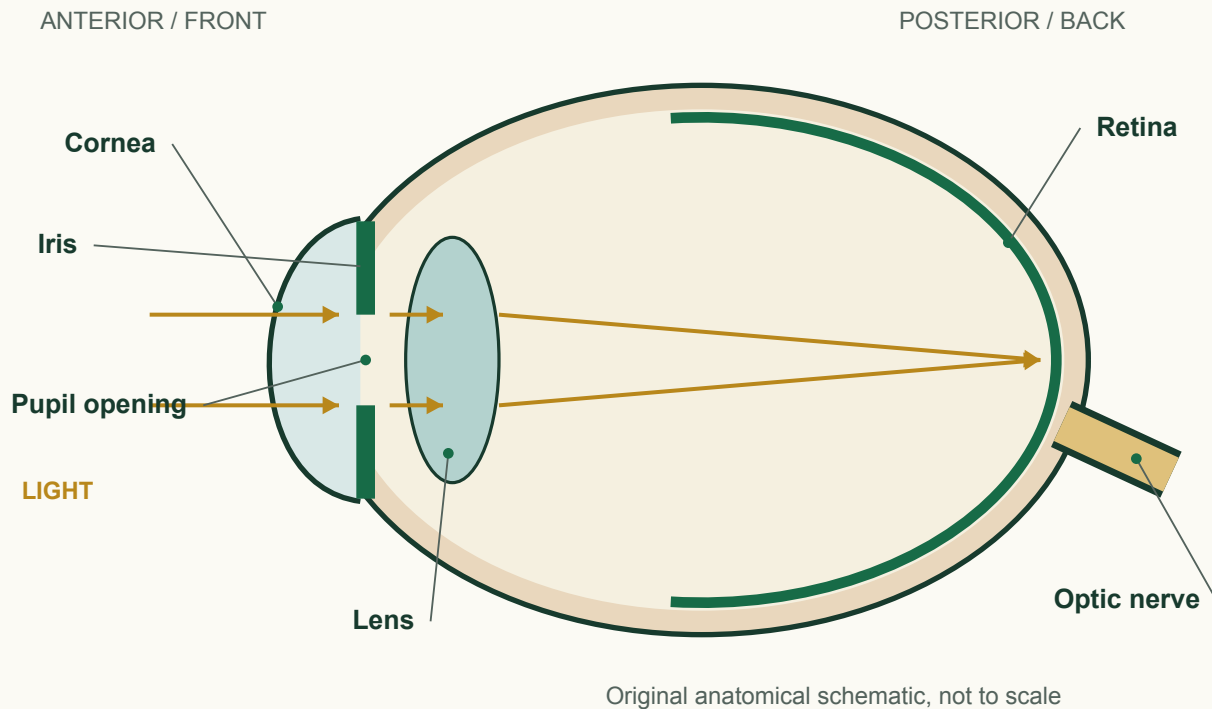


Figure E1. Follow the signal. Light crosses the cornea, passes through the pupil, and crosses the lens. The cornea and lens focus it onto the retina. Retinal cells change light into electrical signals. Those signals travel through the optic nerve toward the brain. The iris controls the pupil opening. [S1]

Your driving question

How do we turn a person's responses into a useful vision record? A screening flags a concern. An eye care professional uses a fuller exam to investigate it.

Route through this guide. Learn the fraction on page 2. Set up and perform the procedure on pages 3 and 4. Record on page 5. Follow the worked case on pages 6 and 7. Explore other exam skills on page 8. Practice with fictional data on page 9.

PART 1 | BACKGROUND AND DEFINITIONS

What does 20/40 mean?

Visual acuity is how well a person resolves small detail under stated test conditions.

Acuity is one part of vision. A chart asks a person to identify optotypes, standardized letters or symbols. Large optotypes are easier to resolve. Small ones demand finer detail. The smallest line that meets that chart's scoring rule becomes the recorded result. [S2, S3]

20/20

At 20 feet, identifies detail the reference observer identifies at 20 feet.

20/40

At 20 feet, identifies detail the reference observer identifies at 40 feet.

20/80

At 20 feet, identifies detail the reference observer identifies at 80 feet.

Figure E2. Read the two numbers. The top number names the test distance in feet for these examples. The bottom number describes the reference distance for that size of detail. The 20/40 row uses larger detail than the 20/20 row. These boxes are explanations, not test targets. [S2]

Keep the meaning, skip the percentage

20/40 does not mean "40 percent vision" or "half of all vision." The fraction describes detail resolution. It does not measure all visual fields, color vision, or eye health. 20/20 is a useful reference for acuity, not proof of perfect eyes.

Metric notation uses meters: 6/6 corresponds to 20/20, and 6/12 to 20/40. A chart designed for 10 feet can still display equivalent 20-foot labels. Use its own instructions. Do not move or resize a chart and keep its old labels. [S2]

What to notice

For the same numerator, a larger denominator describes poorer measured detail resolution. 20/20 is finer than 20/40. Some people resolve finer detail than 20/20, such as 20/15.

PART 2 | DIRECTIONS

Build a fair vision station

The distance, lighting, correction, and covered eye are part of the measurement.

The team prepares the station before calling Case FOCUS. They use a real, approved chart and its manual. This guide and its screen graphics cannot replace a calibrated chart. In class, use fictional records unless your teacher and nurse approve the actual screening procedure.

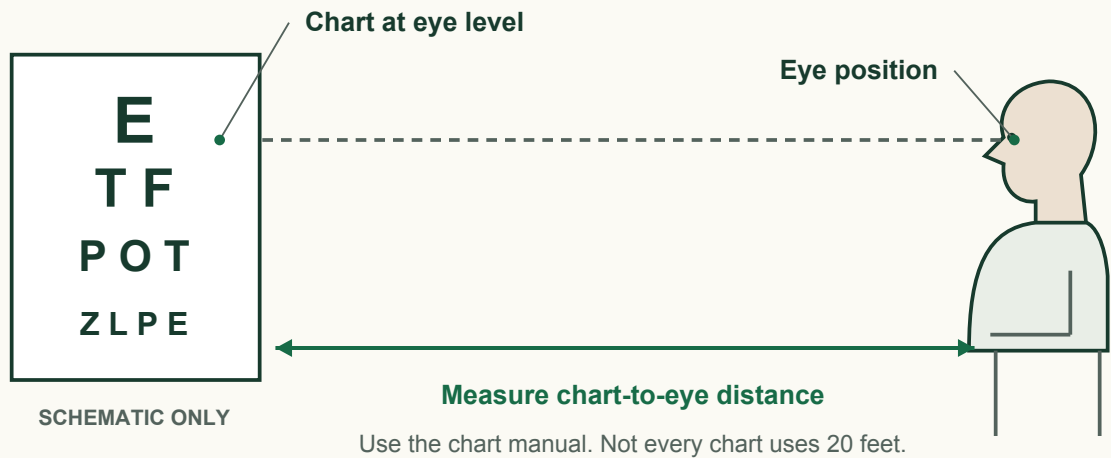


Figure E3. Set the geometry. The person's eyes, not their toes, define the viewing distance. Give the chart even light without glare. A floor mark helps the person keep position. The diagram is not to scale. [S2, S8]

Prepare	Check before starting
Equipment	Approved distance chart + its manual; tape measure; approved clean occluder; record sheet; usual distance glasses if prescribed.
Environment	Chart at suitable eye level; even light; no glare, crowding, or coaching. Keep the chart and person in the specified positions.
Correction	Use the usual prescribed distance correction as the screening protocol directs. Record glasses, contact lenses, or no correction. Do not borrow another person's glasses.
Permission and comfort	Explain the task. Allow questions or stopping. For actual concerns, involve the teacher or nurse. Keep any actual record private.

PART 2 | DIRECTIONS

Measure one eye at a time

Use this sequence with the actual chart manual and a trained supervising adult.

1. Explain and check

Say, "Read the letters I indicate. Tell me if you cannot make them out." Confirm the chart's distance, lighting, correction, and scoring instructions. Use a chart that matches the person's communication needs.

2. Position and start

Place the person at the marked eye-to-chart distance. Keep the head upright. Begin with the large line specified by the chart protocol. Explain any matching or pointing response before scoring.

3. Test the right eye

Cover the left eye with an approved occluder. Keep both eyes comfortably open behind it. Do not press on the eye. Watch for peeking around the edge, a head turn, or leaning toward the chart.

4. Move through the lines

Indicate letters without covering their neighbors. Follow the chart manual for the order, number of letters, and when to stop. Record correct and missed letters. Do not coach the identity of a letter.

5. Score and record

Use the actual chart's pass rule. Record the smallest line meeting that rule, missed letters, right eye, test distance, correction, and any problems. If the conditions failed, record the problem instead of a confident result.

6. Switch eyes

Cover the right eye. Test and record the left eye with the same conditions. Use the manual's alternate chart or sequence if provided. Two eyes together can hide a difference between eyes.

7. Clean and review

Clean reusable equipment as its maker and school infection-control policy require. A nurse or trained professional reviews genuine concerns and follows current rescreen/referral procedures. Classroom practice does not diagnose.

The rule belongs to the chart

Different charts have different letter counts and scoring rules. There is no universal "miss two and stop" rule. The simulation uses a pre-scored fictional record, not a clinical scoring algorithm.

PART 2 | DIRECTIONS

Create a record others can use

A number needs its conditions. Write down how the number was obtained.

The recorder sees Case FOCUS reach a smaller line and hesitate. "Do I just write 20/40?" they ask. The screener says, "Add which eye, the distance, the correction, and what happened. The next person needs the same context."

Field	What to write
Eye tested	Right eye or left eye. A binocular result means both eyes together; it cannot replace two separate-eye results.
Chart and distance	Actual chart type/model and specified viewing distance. Record any nonstandard condition, and do not apply standard labels blindly.
Correction	Usual distance glasses, contact lenses, or none, according to the protocol. "With usual glasses" is not the same as best possible correction.
Responses	Smallest line meeting the actual chart rule; number or identity of missed letters; smaller line attempted; any unreliable response.
Conditions	Lighting, glare, occlusion, leaning, understanding, or any interruption that affected the result.
Next step	Teacher/nurse or qualified eye care follow-up per current protocol. Report concerns with neutral language.

Build your practice record

For the fictional case on page 9, write two rows in your notes, one for each eye. Add chart and distance, correction, smallest line, response note, and conditions. Then write one sentence about the limit of the result.

Use words before abbreviations

Right eye may appear as OD; left as OS; both eyes as OU. Write the full words in class so laterality stays clear. Never swap the observer's right with the person's right.

PART 3 | WORKED EXAMPLE

Follow Case FOCUS

A wholly fictional adult demonstration. These are model values, not your own measurements.

Case FOCUS wears their usual distance glasses. The fictional screener uses a 20-foot distance chart at 20 feet. Lighting is even, glare is absent, and each eye is covered in turn. The person understands the letters. The same protocol is used for both eyes.

Line label	Right eye responses	Left eye responses
20/80	5 of 5 correct	5 of 5 correct
20/50	5 of 5 correct	5 of 5 correct
20/40	5 of 5 correct	5 of 5 correct
20/32	1 of 5 correct	5 of 5 correct
20/25	Not tested	5 of 5 correct
20/20	Not tested	5 of 5 correct

Record E4. Simulated responses. The fictional chart protocol has already been applied to this record. Right eye is recorded as 20/40. Left eye is 20/20, the smallest line supplied and tested. Finer left-eye lines were not tested. These extremes avoid a borderline partial-line scoring example.

Why the team stops guessing

The right eye reads every letter on 20/40, then only one on 20/32. The left reaches 20/20. The team records two results. They do not combine them into an average. They do not call the right eye "lazy," name a disease, or choose a glasses prescription.

Worked report

"In this fictional 20-foot test with usual distance glasses, right-eye acuity was 20/40 and left-eye acuity was 20/20. The right eye resolved less detail under these conditions. The cause remains unknown. A qualified eye care professional should evaluate the concern."

Do not copy the model's numbers into your own case. The simulation lets you reveal this same record step by step. Use your optional practice record on page 9 to rehearse the reasoning with different values.

PART 3 | WORKED EXAMPLE

Analyze the result carefully

Observation, possible mechanism, next step. Keep those three ideas separate.

1. State the observation

From Record E4, the right eye resolves less detail than the left under the stated conditions. 20/40 is reduced relative to the 20/20 reference. A two-eye result could have hidden this difference. The separate records make it visible.

2. Check measurement quality first

Ask whether the chart was at its specified distance. Was glare present? Could the covered eye peek? Were the intended glasses worn? Did the person know the symbols? If the answer is uncertain, describe the uncertainty and ask for trained review.

3. Connect a possible mechanism

A refractive error occurs when the eye's optical system fails to focus light clearly on the retina. It can reduce acuity. In myopia, light from distant objects focuses in front of the retina. That is one possible mechanism for distance blur, not a diagnosis of Case FOCUS. [S5, S6]

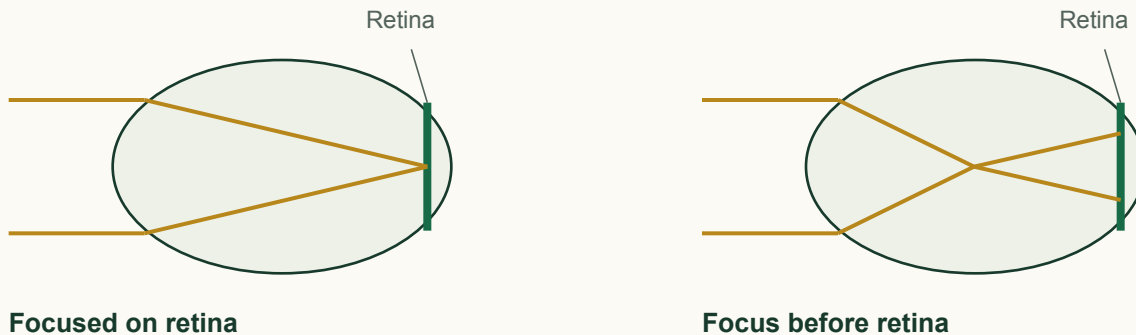


Figure E5. Compare focal position. Left: rays meet at the retinal plane. Right: rays meet before it and spread by the time they reach the retina. These simplified light-path models illustrate focus only. They are not ray-traced clinical models. [S5, S6]

4. Name the limit and next step

Acuity alone cannot tell whether blur comes from refraction, the retina, the nerve pathway, or another problem. It does not determine a lens prescription. If an actual person reports pain, sudden change, or an injury, stop the classroom activity and tell the teacher or nurse promptly.

PART 1 EXTENSION | BEYOND THE CHART

An eye exam asks more

A clinician chooses tests for the question. One chart cannot answer them all.

Case FOCUS asks, "If I read 20/20, does that mean everything is healthy?" The team explains that a chart tests detail. A comprehensive eye exam checks more functions and structures. Some eye diseases have few early symptoms. [S4]

Exam component	What it explores	Classroom boundary
Distance and near acuity	Detail at stated far or near distances. Near tests use their own target, distance and instructions.	Use approved charts only under supervision, or supplied fictional records.
Visual fields	The area seen while looking straight ahead, including side vision.	A rough class model cannot rule out a field defect. Keep the gaze fixed if a teacher models the idea.
Pupil response	How pupil size changes with light, including the response in each eye.	Use the diagram below. No lasers, phone flash, strong lights or prolonged light exposure in class.
Eye movements	How the eyes move together and track a target.	A teacher may model following a comfortable target. Stop with discomfort or double vision.
Color vision	Ability to distinguish specified color patterns under standardized conditions.	A screen's colors and printed copies vary. This package is not a color vision test.
Pressure and internal exam	Tonometry measures eye pressure. A clinician may dilate pupils with drops to inspect internal structures.	No eye-contact instruments, pressure tests or dilation drops in class.

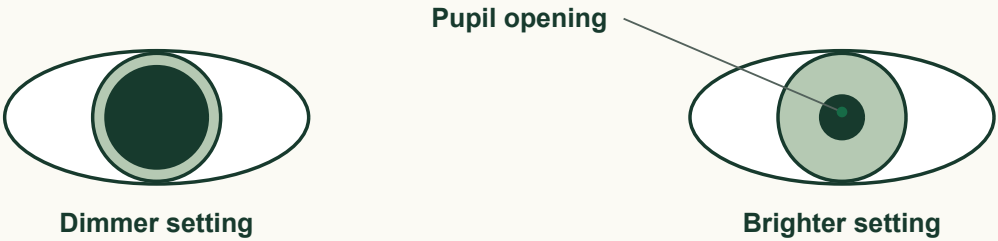


Figure E6. Pupil size model. The dark opening is larger in the dimmer model and smaller in the brighter model. The iris surrounds it. This drawing shows a general response, not a clinical pupil exam. [S1, S4]

PART 4 | YOUR WORK

Practice with fictional evidence

Use the offline simulation first. Then explain a fresh record in your own words.

Open Eye-Exam-Simulation.html

The page works without an internet connection. It never tests your eyes. Do not stand back or try to read its drawings as a chart. All letter responses are fixed teaching data from Case FOCUS.

1. In "Decode the fraction," choose 20/20, 20/40, or 20/80. Read the full distance statement.
2. In "Prepare the fictional station," check the four setup steps. Say why each matters.
3. Reveal one chart line at a time for the right eye. Record the supplied responses. Switch to the left eye and repeat.
4. Compare the completed record to E4 on page 6. Read the limit before writing a conclusion.
5. Reset the page to practice again. No information is saved or sent.

If you cannot open the simulation

Use Record E4 on page 6. Cover the lower rows with paper. Reveal one row at a time, record each eye separately, and use the worked report to check your reasoning. Every required input is already in this guide.

Your optional case: Record E7

A different fictional adult is tested using a 20-foot chart at its specified 20 feet. Usual distance glasses are worn. Each eye is tested separately. Lighting, occlusion, and understanding are satisfactory. The chart protocol is already applied.

Eye	Recorded acuity	Response note
Right	20/25	All letters on that line; next smaller line did not meet the actual protocol.
Left	20/50	All letters on that line; next smaller line did not meet the actual protocol.

Use it now. Write a three-sentence report using E7. First, state both results and their conditions. Second, compare the measured detail resolution. Third, name one limit and the appropriate professional next step. Do not diagnose a cause.

Reflect. Which setup error could make a line look easier? Explain the direction of the error. Then explain why 20/20 cannot certify all eye health. Use pages 2, 3 and 8. This is optional practice; no new submission is required.

PART 4 | KEEP THE LEARNING

Words you can use precisely

Record, Reduce, Review, Reflect, Recite, Revise.

Term	Plain-language meaning
Acuity	Ability to resolve small visual detail under stated conditions.
Optotype	A standardized letter or symbol used in an acuity chart.
Cornea	Clear curved front surface that helps bend incoming light.
Pupil / iris	Pupil: opening for light. Iris: surrounding tissue that controls its size.
Lens	Clear structure behind the pupil that helps focus light.
Retina / optic nerve	Retina: light-sensitive tissue. Optic nerve: carries visual signals toward the brain.
Refraction	Bending of light as it passes between materials.
Refractive error	Optical focusing problem that can cause blur.
Myopia	Nearsightedness; distant-object light focuses in front of the retina.
Correction	Prescribed glasses or contact lenses used during the test.
Occlusion	Blocking the eye that is not being tested, without pressing on it.
Monocular / binocular	One eye / both eyes. Record exactly which condition was used.
Visual field	Area a person can see while gaze stays fixed.
Screening / referral	A brief check for concerns / directing a concern to qualified eye care.
Dilation / tonometry	Clinician widening of the pupil / clinician measurement of eye pressure.

Recite, then revise

Close the guide. Explain the 20/40 fraction aloud. Name four conditions that belong in a record.

Reopen pages 2 to 5 and correct one missing detail in your explanation.

EVIDENCE AND NEXT STEPS

Sources and claim ceilings

Facts checked October 16, 2026. These links are optional; the guide supplies every practice input.

S1. National Eye Institute (NEI), How the Eyes Work. Updated April 20, 2022. [Source](#)

S2. American Academy of Ophthalmology (AAO), EyeWiki: Visual Acuity Testing in Adults. Acuity notation and documentation. [Source](#)

S3. American Association for Pediatric Ophthalmology and Strabismus (AAPOS), Vision Screening. Updated April 2024. [Source](#)

S4. NEI, Get a Dilated Eye Exam. Updated November 26, 2025. [Source](#)

S5. NEI, Refractive Errors. Updated December 19, 2025. [Source](#)

S6. NEI, Nearsightedness (Myopia). Updated December 4, 2024. [Source](#)

S7. NEI, Color Blindness. Updated November 5, 2025. [Source](#)

S8. Ohio Department of Health, Vision Screening Requirements and Guidelines, 2017. Historical procedural support, mirrored by Prevent Blindness Ohio. [Source](#)

S9. AAPOS, Vision Screening Recommendations. Age-specific professional guidance. [Source](#)

The evidence supports a careful screening record

Acuity results compare resolved detail under stated conditions. They do not identify a disease, set a lens prescription, certify fitness for an activity, or rule out all eye problems. Fictional responses are teaching examples, not clinical evidence.

Actual school screening. Use a nurse or trained screener, the actual approved chart manual, and current district and Ohio procedures. The 2017 manual is not presented as current policy. If symptoms or concerns occur, involve the teacher/nurse and qualified eye care. Do not keep repeating a classroom test to dismiss a concern.

Illustration provenance. E1, E2, E3, E5 and E6 are original vector teaching illustrations built for this guide from the cited anatomy and measurement facts. They are schematic and not to scale. E4 and E7 are wholly fictional records. No patient photographs, student records, or diagnostic chart images are used.