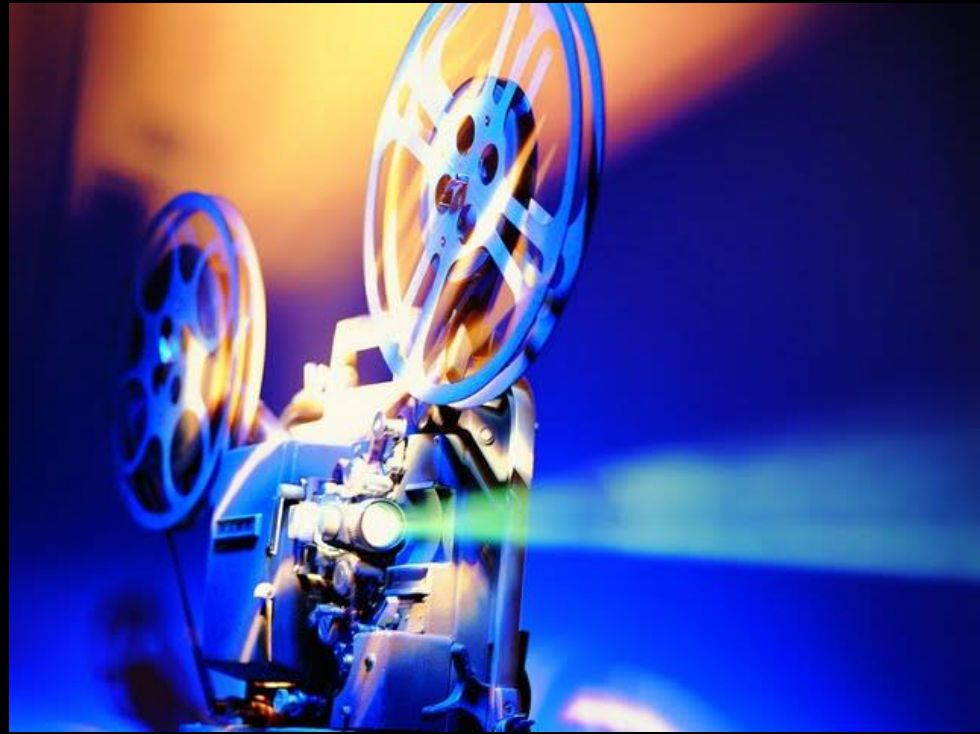


LENSES & FOCUS

Middle School Film Studies
Unit 14



Focus

- Focus refers to the degree to which light rays coming from any particular part of an object pass through the lens and re-converge at the same point on a frame of the film negative, creating sharp outlines and distinct textures that match the original object.
- This optical properties of the movies creates variations in depth of field-- through shallow focus, deep focus, and techniques such as racking focus.



Deep Space

- A film utilizes deep space when significant elements of an image are positioned both near to and distant from the camera.
- For deep space these objects do not have to be in focus, a defining characteristic of deep focus. Staging in deep space is the opposite of staging in shallow space.



Shallow Space

- The opposite of deep space, in shallow space the image is staged with very little depth.
- The figures in the image occupy the same or closely positioned planes. While the resulting image loses realistic appeal, its flatness enhances its pictorial qualities.
- Striking graphic patterns can be achieved through shallow space.



Depth of Field

- The distance in which all elements in an image are in sharp focus.
- Bright light and a narrow lens aperture tend to produce a larger depth of field, as does using a wide-angle rather than a long lens.
- A shallow depth of field is often used as a technique to focus audience attention on the most significant aspect of a scene without having to use a cut-in edit.

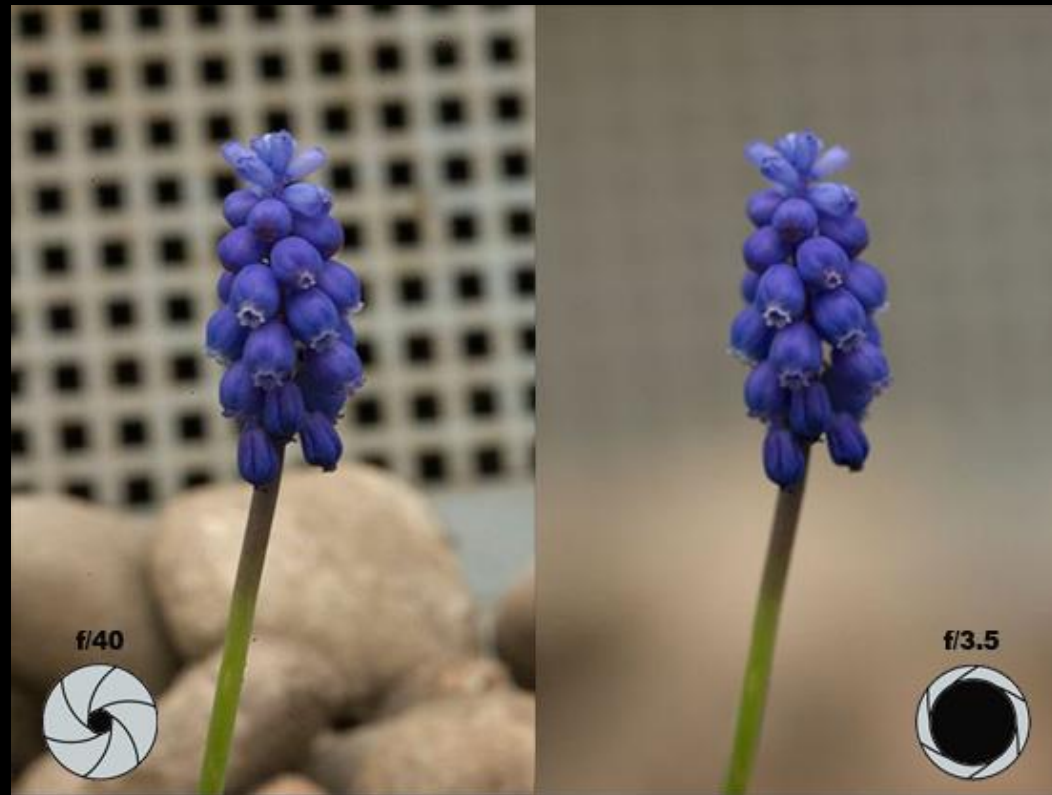


Depth of Field

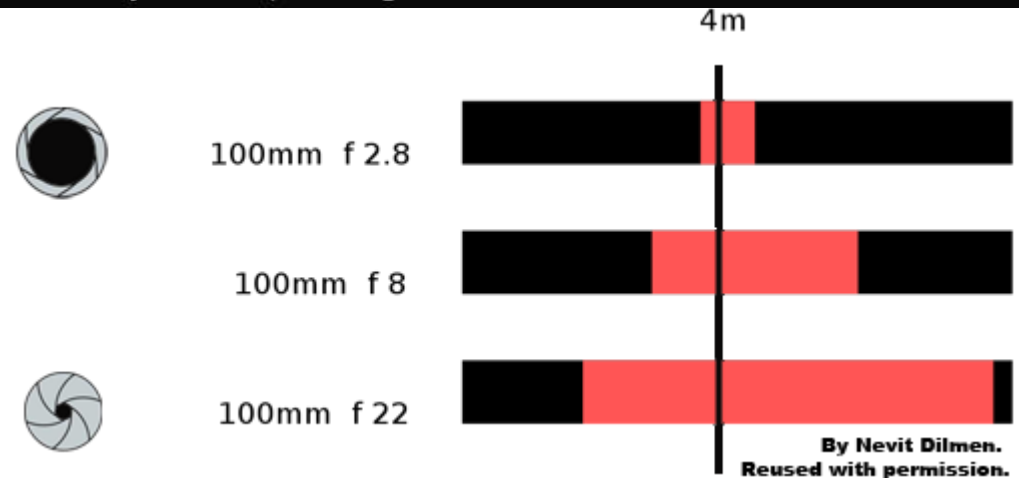
- Three parts of the camera affect depth of field:
 - Aperture
 - Focal length
 - Focus distance

- **The Aperture**

- The aperture is the factor that most influences depth of field. The wider the aperture is, the shallower depth of field will be. A low f-number such as $f/2.8$ will likely render an image with some soft focus. Conversely, the narrower the aperture is, the deeper depth of field will be.

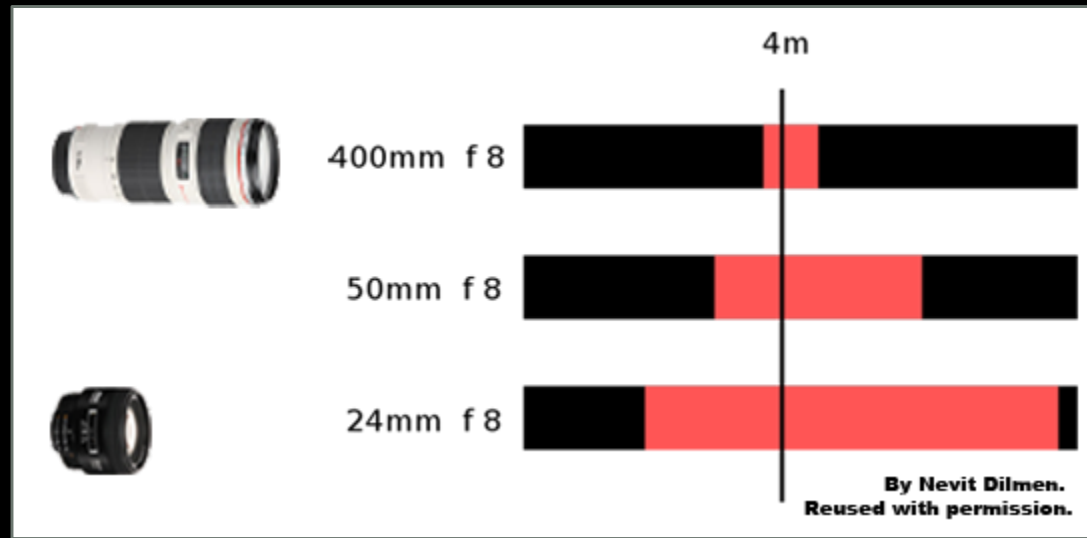


Effect of the aperture (f-stop) on depth of field. A wider aperture will cause shorter depth of field, meaning more blur or soft focus in the frame.



Depth of Field

- **Focal Length:** The longer the lens, the shallower depth of field is. A wide angle lens (a short lens), for instance, would render an image with more depth of field than one with a telephoto lens (a long lens).



Telephoto lens often creates shallow Depth of Field.
Shallow Depth of Field = More Blur, Less Focus

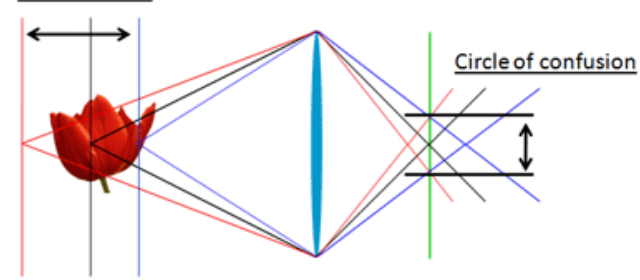


Wide-angle lens often creates deep Depth of Field.
Deep Depth of Field = More Sharpness, Focus

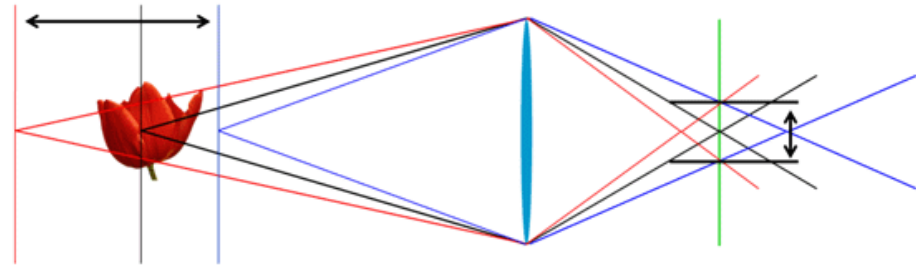
Depth of Field

- **Focus Distance:** The closer the focus distance is to the camera, the less depth of field you have.
- On close-ups of actors or objects, part of the frame is usually blurrier than on long shots of landscapes.

Depth of field



Longer subject distances mean larger depth of field range



Deep Focus

- Like deep space, deep focus involves staging an event on film so that significant elements occupy widely separated planes in the image.
- Unlike deep space, deep focus requires that elements at very different depths of the image all be in focus.



Shallow/ Selective Focus

- A restricted *depth of field*, which keeps only one plane in sharp focus; the opposite of *deep focus*.
- Used to direct the viewer's attention to one element of a scene.
- Shallow focus is very common in close-up.



at infinity, the near focus of
distance for that aperture. The
scales on a lens barrel
hyperfocal distance opposite
you are using. If you the
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Racking Focus

- Racking focus refers to the practice of changing the focus of a lens so that an element in one plane of the image goes out of focus and an element at another plane in the image comes into focus.
- This technique is an overt way of steering audience attention through the scene, as well as of linking two spaces or objects.
- Racking focus is usually done quite quickly; in a way, the technique tries to mimic a person's brief glance and can be used to quicken the tempo or increase suspense.



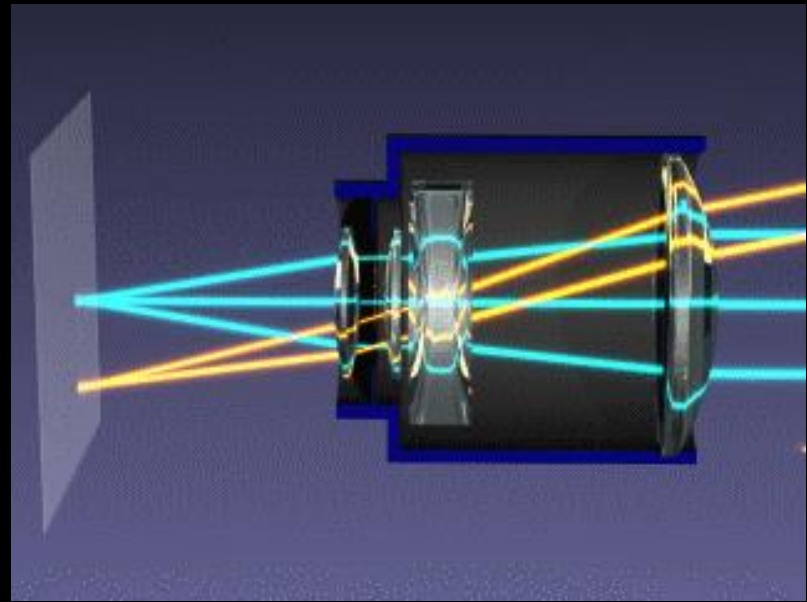
Telephoto Lens

- Reduces the depth and volume of images within the frame.
- This lens usually isolates a single image in focus, leaving the rest of the focal planes within the frame in less focus (i.e., the opposite effect of the wide-angle lens).
- An image shot with an extremely long lens is called a telephoto shot.
- One effect of using a long lens is to compress the apparent depth of an image, so that elements that are relatively close or far away from the camera seem to lie at approximately the same distance.



Zoom Lens

- A **zoom lens** is a mechanical assembly of lens elements for which the focal length (and thus angle of view) can be varied, as opposed to a fixed focal length (FFL) lens (prime lens).
- Zoom lenses, like dolly and tracking shots, can create movement.
- Fixed lenses are typically used in film, due to their better image quality.



Zoom Shot

- The zoom shot uses a lens with several elements that allows the filmmaker to change the focal length of the lens while the shot is in progress.
- We seem to move toward or away from the subject, while the quality of the image changes from that of a shorter to a longer lens, or vice versa.
- The change in apparent distance from the subject is similar to crane or tracking shots, but changes in depth of field and apparent size is quite different.
- Zooms are sometimes used at the beginning of a scene, or even of a film, to introduce an object or character by focusing on it.



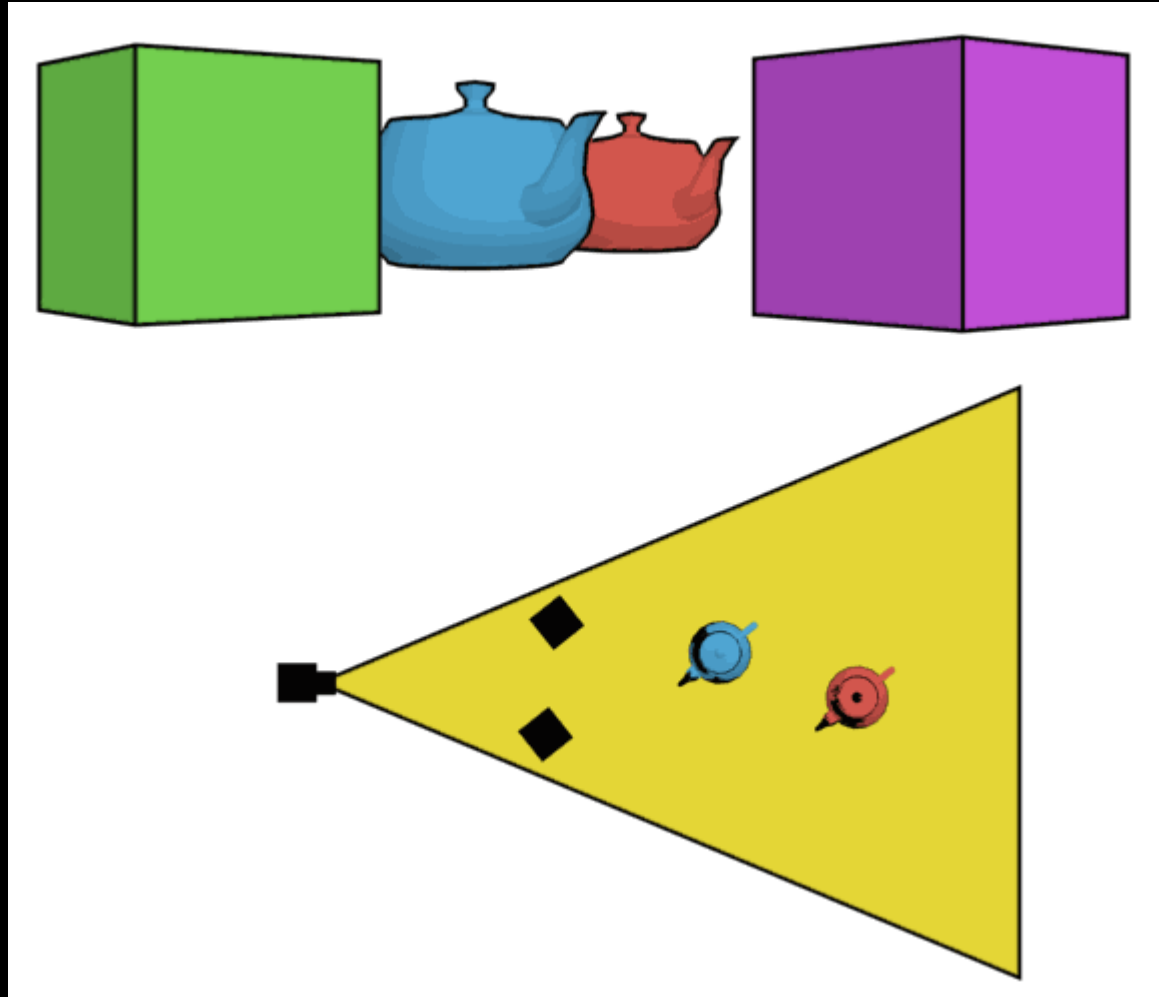
The Conversation (1974)

Dolly Zoom Shot

- In a Dolly Zoom, the camera moves closer to a subject while at the same time zooming out its field of view.
- The effect could also be achieved in reverse: the camera dollies away from the subject while zooming in its field of view.
- The effect is jarring - the world seems to become a foldable accordion; we rarely see these two processes happening at the same time in cinema.
- Often used to represent the sensation of vertigo, a "falling-away-from-oneself feeling" or a feeling of unreality, or to suggest that a character is undergoing a realization that causes him or her to reassess everything he or she had previously believed.



Dolly Zoom Shot



Wide-Angle Lens

- Places most or all focal planes on the screen in focus for the viewer-- that is, more objects come into focus.
- This lens also exaggerates depth within the frame, and it may even distort images or boundaries within the frame when used for a medium or close-up shot. Also, the sense of movement within the frame increases.



85mm @ 200cm

35mm @ 85cm

16mm @ 40cm

12mm @ 30cm

8mm @ 20cm

Wide-Angle Lens

- A lens of short focal length affects a scene's perspective by distorting straight lines near the edges of the frame and by exaggerating the distance between foreground and background planes.
- In doing so, it allows for more space to enter the frame, which makes it more convenient for shooting in a closed location, for instance a real room, rather than a three-wall studio room.
- In addition, a wider lens allows for a bigger depth of field. In 35mm filming, a wide angle lens is 30mm or less.



Extreme Wide-Angle Lenses

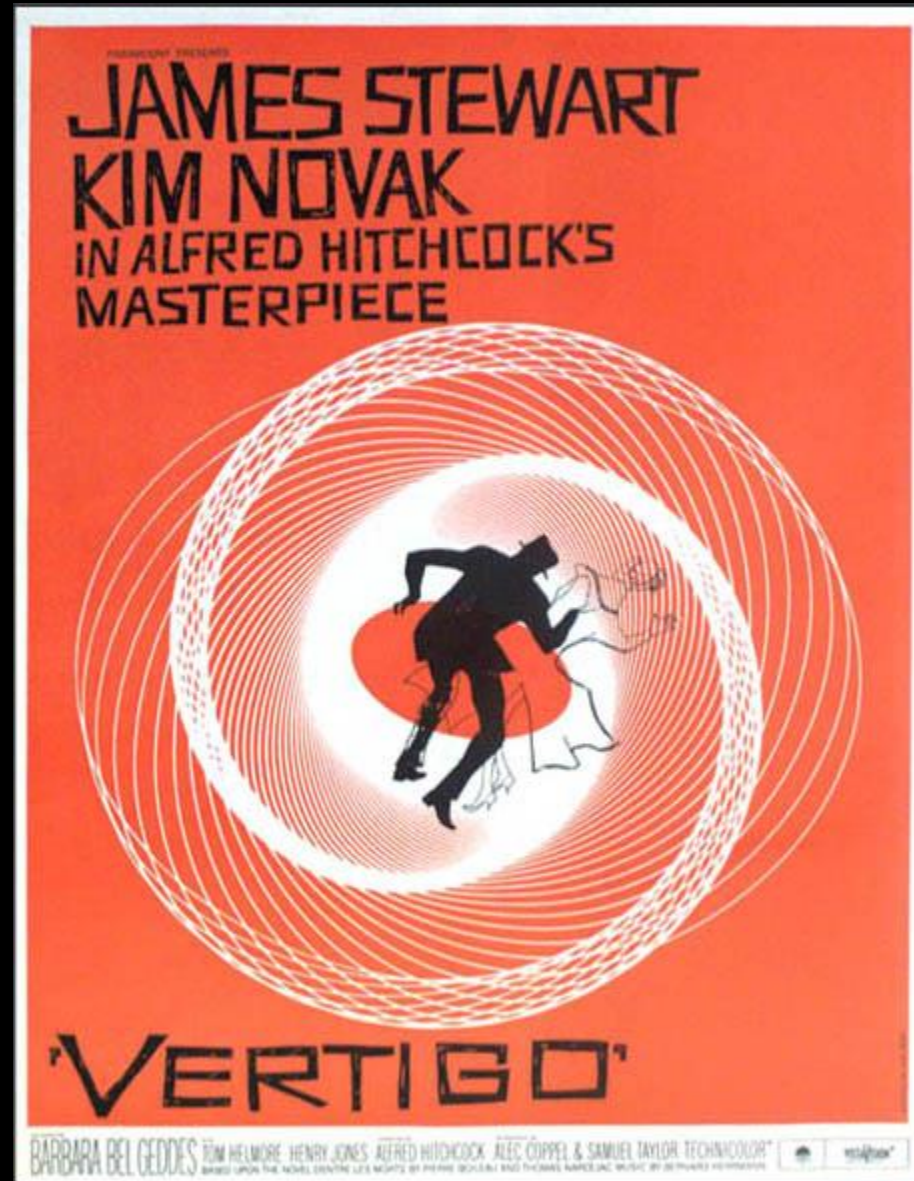


Videos

- [Filmmaking Tips: Lenses](#)
- [Introduction to the Dolly Zoom](#)
- [Evolution of the Dolly Zoom](#)

Lenses & Focus: Examples

- In the following film clip, identify the effect the use of lenses and focus has on your experience of the scene.
- *Vertigo* (1958)



Lenses & Focus: Examples

- In the following film clip, identify the effect the use of lenses and focus has on your experience of the scene.
- *The Graduate* (1967)

JOSEPH E. LEVINE
PRESENTS
A
MIKE NICHOLS
LAWRENCE TURMAN
PRODUCTION



This
is
Benjamin.
He's
a little
worried
about
his
future.

THE GRADUATE

STARRING
ANNE BANCROFT AND **DUSTIN HOFFMAN** · **KATHARINE ROSS**
SCREENPLAY BY
CALDER WILLINGHAM AND **BUCK HENRY** SONGS BY **PAUL SIMON**
PERFORMED BY
SIMON AND **GARFUNKEL** PRODUCED BY
LAWRENCE TURMAN
DIRECTED BY
MIKE NICHOLS TECHNICOLOR® PANAVISION®

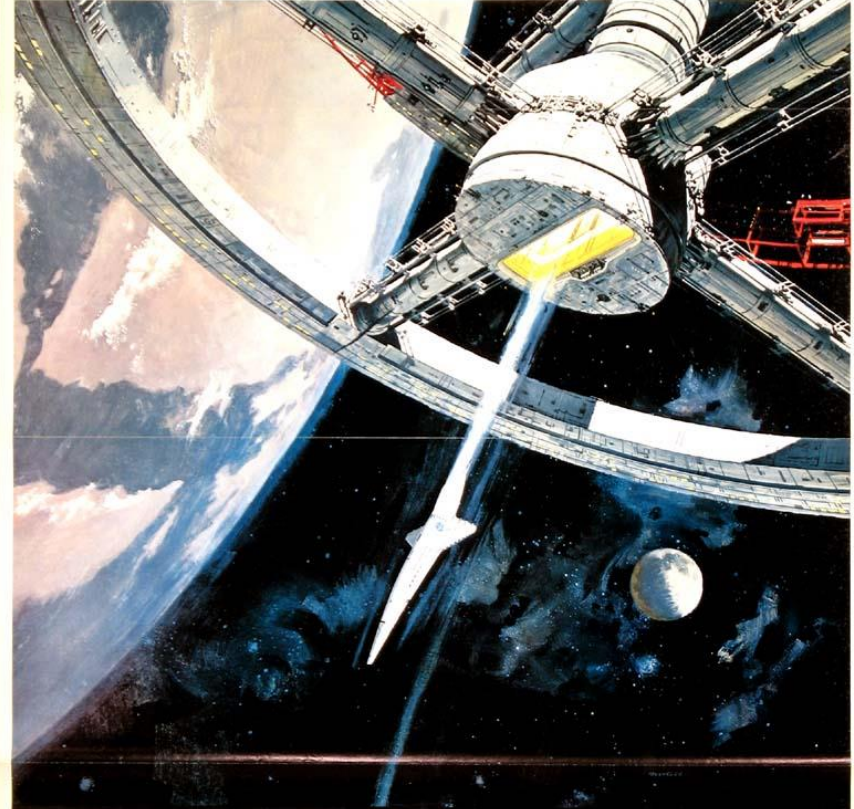
United Artists
Entertainment Corp.
Panama Pictures Corporation

Lenses & Focus: Examples

- In the following film clip, identify the effect the use of lenses and focus has on your experience of the scene.
- *2001: A Space Odyssey (1968)*

An epic drama of
adventure and exploration

Space Station One: your first step in an Odyssey that will take you to the Moon, the planets and the distant stars



2001: a space odyssey MGM PRESENTS A STANLEY KUBRICK PRODUCTION

Super Panavision® and Metrocolor




Lenses & Focus: Examples

- In the following film clip, identify the effect the use of lenses and focus has on your experience of the scene.
- *The Conversation* (1974)

BRAND NEW 35MM PRINT

Harry Caul is an invader of privacy. The best in the business. He can record any conversation between two people anywhere. So far, three people are dead because of him.



WINNER PALME D'OR CANNES
FILM FESTIVAL 1974

GENE HACKMAN in
“THE CONVERSATION” (M)¹⁵⁺

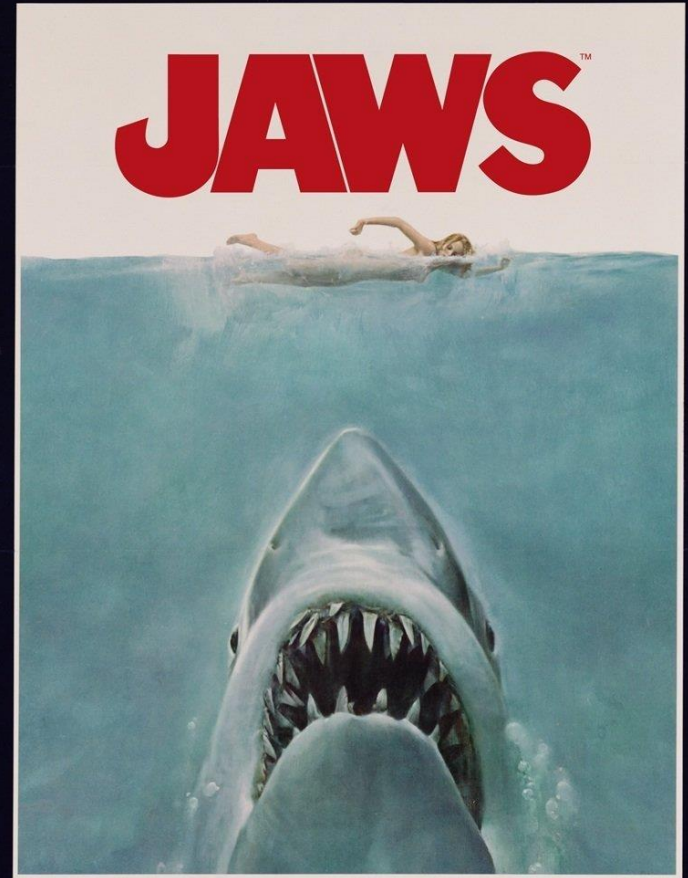
Written, Produced and Directed by **FRANCIS FORD COPPOLA**

Co-starring JOHN CAZALE • ALLEN GARFIELD • CINDY WILLIAMS • FREDERIC FORREST • HARRISON FORD • TERI GARR and ROBERT DUVAL

Lenses & Focus: Examples

- In the following film clip, identify the effect the use of lenses and focus has on your experience of the scene.
- *Jaws* (1975)

*The terrifying motion picture
from the terrifying No.1 best seller.*



ROY SCHEIDER **ROBERT SHAW** **RICHARD DREYFUSS**
JAWS

Co-starring LORRAINE GARY • MURRAY HAMILTON • A ZANUCK/BROWN PRODUCTION
Screenplay by PETER BENCHLEY and CARL GOTTLIEB • Based on the novel by PETER BENCHLEY • Music by JOHN WILLIAMS
Directed by STEVEN SPIELBERG • Produced by RICHARD D. ZANUCK and DAVID BROWN • A UNIVERSAL PICTURE •
TECHNICOLOR® PANAVISION® **PG** PARENTAL GUIDANCE SUGGESTED
SOME MATERIAL MAY NOT BE SUITABLE FOR PRE-TEENAGERS **ORIGINAL SOUNDTRACK AVAILABLE ON MCA RECORDS & TAPES**
...MAY BE TOO INTENSE FOR YOUNGER CHILDREN

Lenses & Focus: Examples

- In the following film clip, identify the effect the use of lenses and focus has on your experience of the scene.
- *Brazil* (1985)



Lenses & Focus: Examples

- In the following film clip, identify the effect the use of lenses and focus has on your experience of the scene.
- *The Good Dinosaur* (2015)



Lenses & Focus Quiz

1. What is Focus?
2. What is Depth of Field?
3. What three elements affect the Depth of Field?
4. What is Deep Focus?
5. What is Shallow or Selective Focus?
6. What is Racking Focus?
7. What is a Telephoto (Long) Lens?
8. What is a Wide Angle (Short) Lens?
9. What is a Zoom Lens?
10. What is the effect of a Dolly Zoom Shot?

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bald999