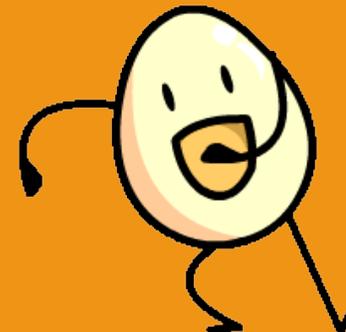


# Egg Quality

4-H Poultry Judging



# How Do I Judge Egg Quality?

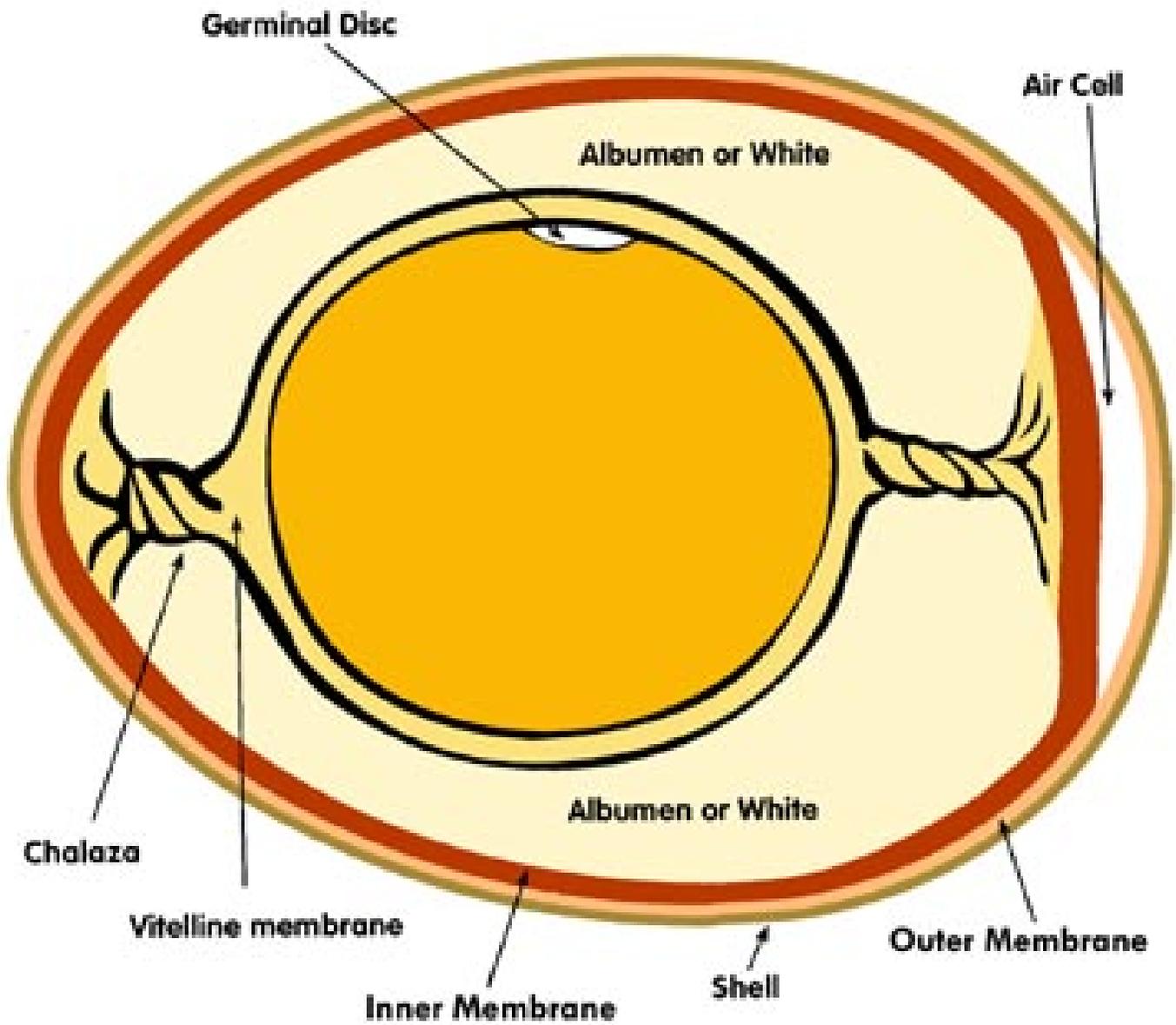
- Interior Quality
- Exterior Quality



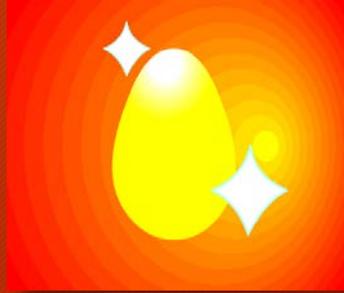
# Interior Quality

- Most important when grading eggs
- Determined by candling
- Egg grades are AA, A, B, and Inedible
- It is important to know the parts of an egg

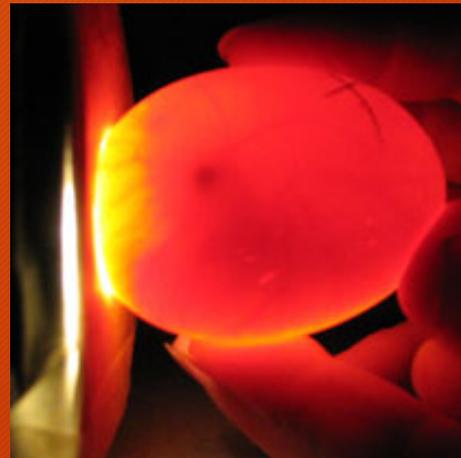




# How to Candle an Egg

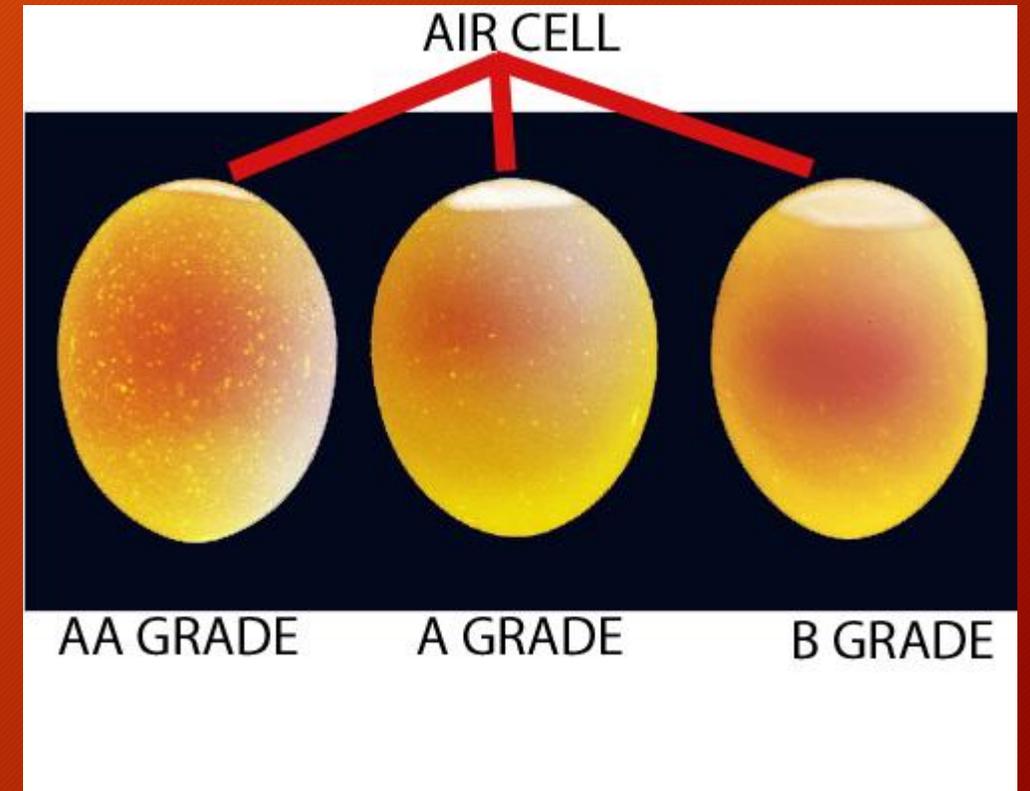


- Hold the large end of the egg up to the light in a slanted position
- You should be able to see the air cell, yolk, and white
- The air cell is almost always on the large end
- Gently whirl the egg-you may see the yolk move

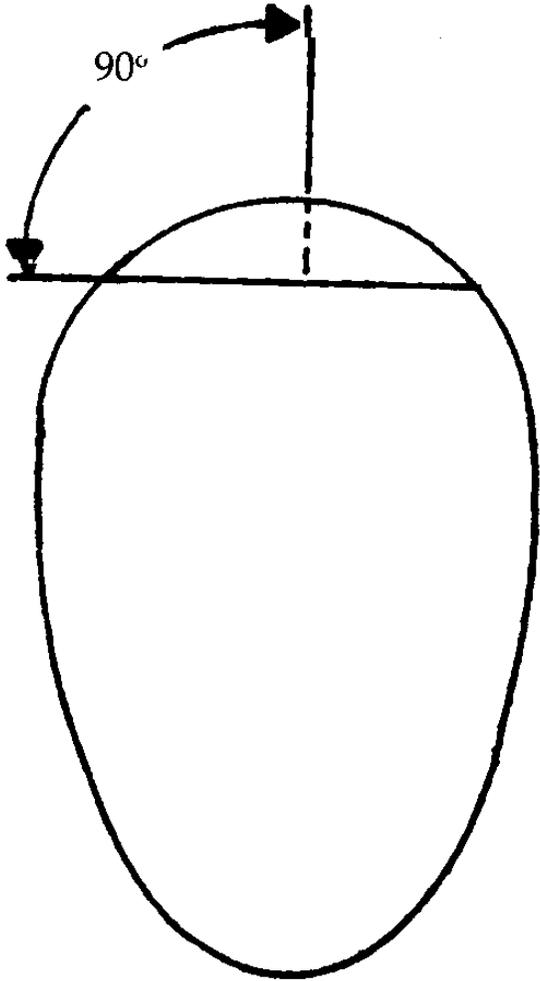


# Air Cell Depth

- In a fresh egg, the air cell is small
- As the egg ages, evaporation takes place and the air cell grows
- The larger the air cell, the lower the grade



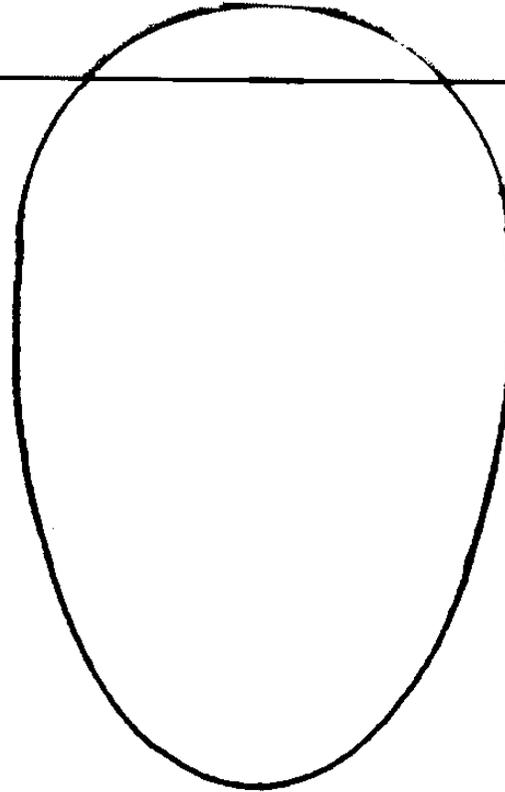
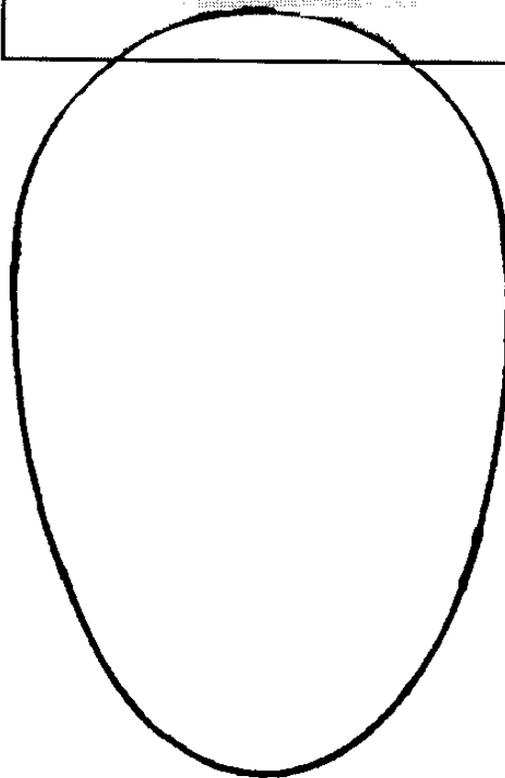
Point from which  
to measure air cell depth



OFFICIAL  
EGG AIR CELL GAUGE

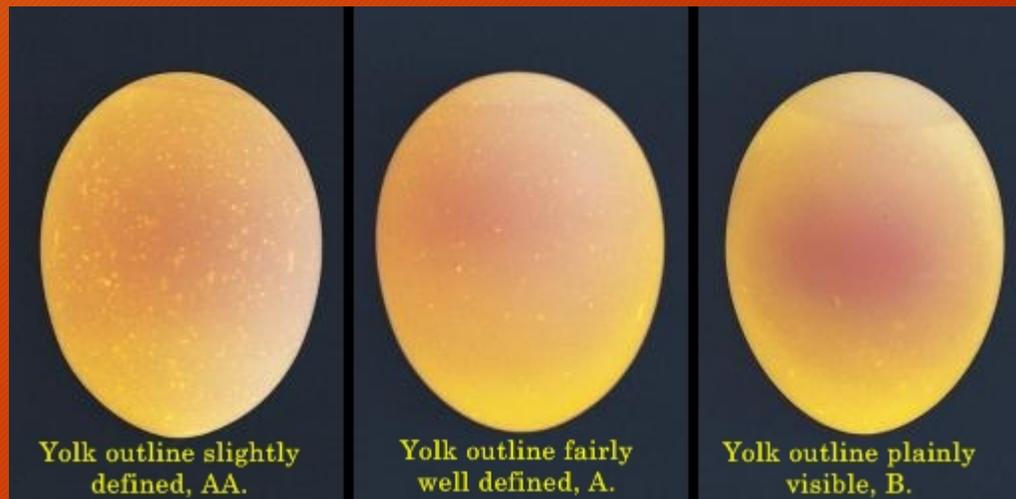
AA QUALITY  
1/8 inch

A QUALITY  
3/16 inch



# Yolk

- Yolk of a fresh, high quality egg:
  - Surrounded by a dense (thick) white
  - It does not move around the egg much
  - It is harder to see
- As an egg ages, the white deteriorates in quality causing the yolk to move more freely and be more visible



# White or Albumen

- Determined by the yolk's behavior when candled
- May see blood spots
  - If less than 1/8<sup>th</sup> of an inch, Grade B
  - If larger than 1/8<sup>th</sup> of an inch, Grade Inedible
  - Don't confuse blood spots with the chalaza (string of albumen that helps hold yolk in the center)

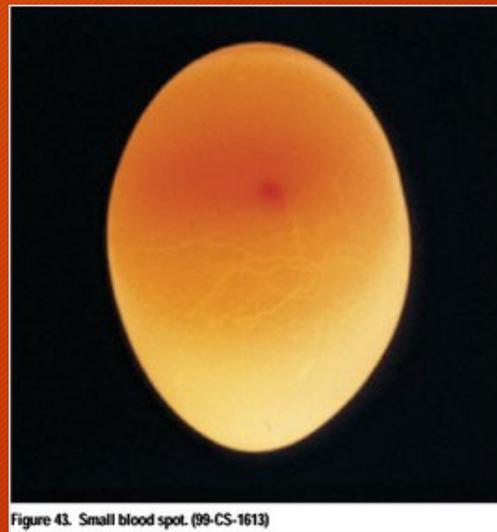


Figure 43. Small blood spot. (09-CS-1613)

**Table 1. Summary of Standards for Interior Quality of Eggs by Candling for 4-H Poultry Judging**

<b>Quality Factor</b>	<b>AA Quality</b>	<b>A Quality</b>	<b>B Quality</b>	<b>Inedible</b>
<b>Air Cell</b>	1/8 inch or less in depth	3/16 inch or less in depth	More than 3/16 inch	Doesn't apply
	Clear Firm	Clear May be reasonably firm	Clear May be weak and watery	Doesn't apply
<b>Yolk</b>	Outline slightly defined	Outline may be fairly well-defined	Outline clearly visible	Doesn't apply
<b>Spots (Blood or meat)</b>	None	None	Blood or meat spots aggregating not more than 1/8" in diameter	Blood or meat spots aggregating more than 1/8" in diameter

# Interior Quality

- The following are NOT to be considered when grading the eggs by candling:
  - Loose, bubbly, or out of position air cell
  - Exterior stains or dirt
  - Faulty egg shape or dirt



# Interior Quality

- <http://www.youtube.com/watch?v=GTzDrEYRDP4>

# Exterior Quality

- In commercial egg-producing plants, eggs are graded on both interior AND exterior quality
- For our contest, we judge it separately
- Grades are A, B, and Dirty
- Eggs cannot be handled during the contest

# Stains

- Grade A eggs should be clean
- Grade B eggs have slight stains
- Dirty eggs have moderate to excess stains

# What's the Grade?



B



A



B



Dirty



Dirty

# Dirt or Foreign Material

- Grade A and B cannot have ANY stuck on dirt or material
- Eggs with dirt larger than a little speck should be graded Dirty
- Small specks of dust or lint that may have settled out of the air should not be considered



# Egg Shape

- Grade A have "approximately the usual shape"
- Grade B may be too round or too long to fit in an egg carton
- Grade B eggs are clearly misshapen



# Shell Texture

- Eggs with faulty texture are weaker and may be broken
  - Mainly refers to calcium deposits
  - Eggs with small calcium deposits are Grade A
  - Eggs with deposits greater than 1/8<sup>th</sup> inch are Grade B
  - There is no rule as to how many calcium deposits can be on the egg
- 
- Rule of thumb: If you pull your fingernail across the deposit and a good size hole is created, it is Grade B (Use your imagination! No touching!)



# Ridges

- Ridges result from weak shells
- Small ridges are still Grade A
- Large ridges are Grade B
- Can also just look like a rough shell



# Shell Thickness

- Grade A have no thin spots
- Any thin spots are Grade B



# Body Checks

- Condition where the shell looks cracked but is intact
- Occurs during shell formation when the shell is cracked then partially calcified before being laid
- An egg with body check is Grade B



# Exterior Quality

- Basically, if the egg looks abnormal or weird, IT IS NOT GRADE A!

**Table 2. Summary of Standards for Exterior Quality of Eggs**

Factor	Grade		
	AA or A	B	Dirty
	Clean—may show small specks, stains or cage marks that do not detract from general clean appearance of the egg—may show traces of processing oil.	Slight or moderate localized stains less than 1/32 of shell or scattered stains less than 1/16 of shell.	Prominent stains. Slight or moderate stains covering more than 1/32 if localized and 1/16 of the shell if scattered.
<b>Adhering Dirt or Foreign Material</b>	NONE	NONE	Adhering dirt or foreign material (1.0 mm in area or greater)
	Approximately the usual shape.	Unusual or decidedly misshapen (very long or distorted).	
<b>Shell Texture</b>	May have rough areas and small calcium deposits that do not materially affect shape or strength.	Extremely rough areas that may be faulty in soundness or strength. May have large calcium deposits.	
<b>Ridges</b>	Slight ridges that do not materially affect shape or strength.	May have pronounced ridges.	
<b>Shell Thickness</b>	Free of thin spots.	May show pronounced thin spots.	
	Absence of body checks.	May show pronounced body checks.	

# Broken-Out Quality

- What the egg looks like out of the shell
- Grades are AA, A, B, and Inedible
- Judge each egg individually...don't compare all the eggs in the class; If you set an incorrect standard, you will miss several eggs

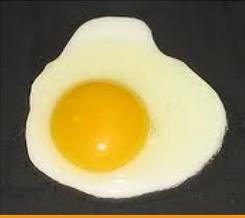


# Blood Spots

- Eggs with spots larger than 1/8<sup>th</sup> inch are Inedible
- Eggs with spots less than 1/8<sup>th</sup> inch are Grade B

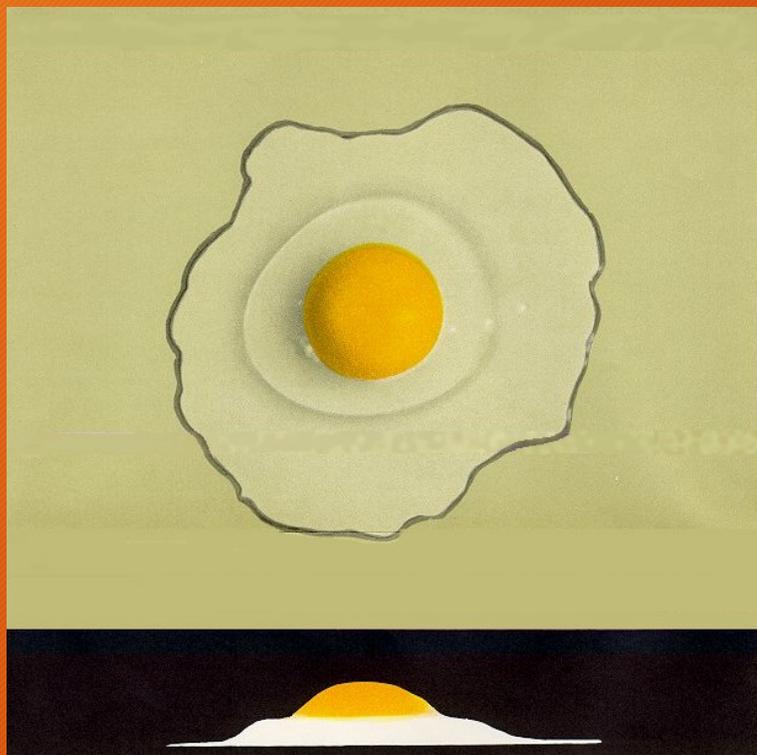


# Albumen (White) Thickness

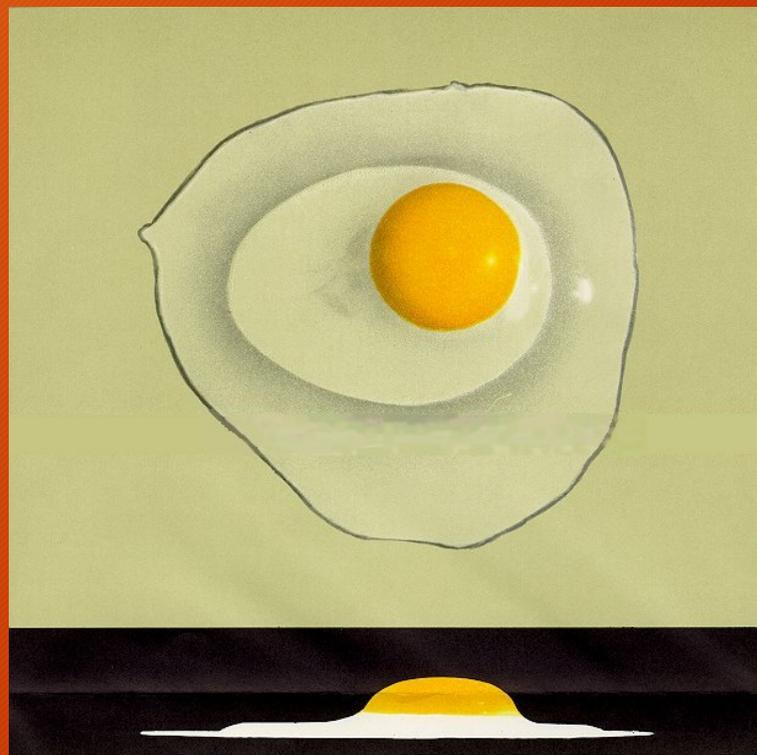


- AA Quality
  - Egg content covers a small area.
  - White is firm, has much thick white surrounding the yolk and small amount of thin white
  - Yolk is round and upstanding
- A Quality
  - Egg content covers a moderate area.
  - White is reasonably firm, has considerable thick white and medium amount of thin white
  - Yolk is round and upstanding
- B Quality
  - Egg content covers a very wide area.
  - White is weak and watery, has no thick white, large amount of thin white is thinly spread
  - Yolk is enlarged and flattened

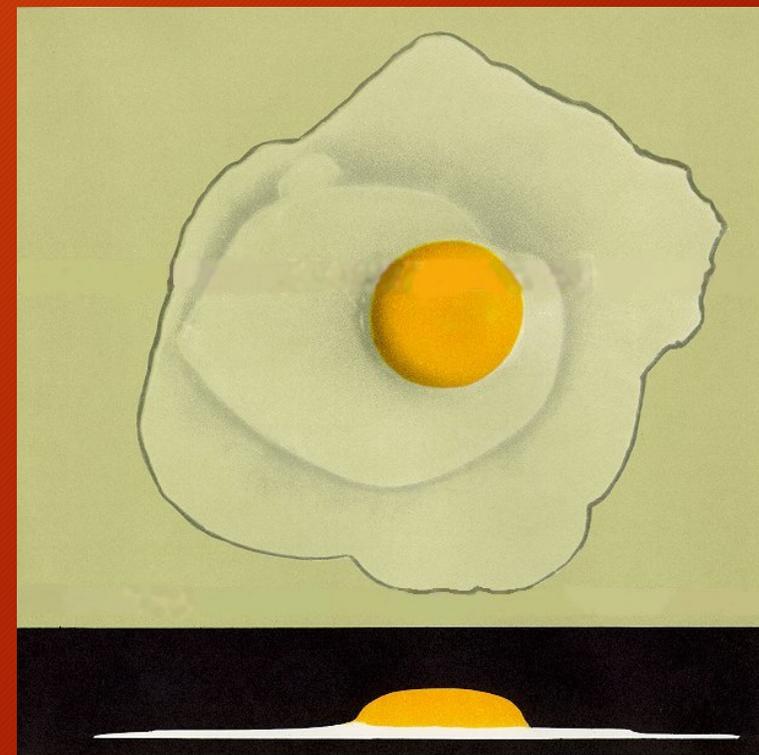
# Broken-out Quality



AA



A



B

# Review