

Light Bulbs Scenario,

Central Region 2008

Astrid and her mother were working on Astrid's 4-H Clover Collection garment in the craft room, when two 40 watt light bulbs in the ceiling fan burned out. These lights are needed to conduct many visual tasks and they need a bulb that will provide a higher contrast than most bulbs. Since Astrid had attended 4-H Electric Camp a couple years ago, she was asked to research light bulbs to determine the best replacement bulbs. The room is used approximately 18 hours a week. Since they typically don't entertain in the craft room, the shape of the bulb is not important, however; often times they are putting puzzles together or hand stitching and other tedious task, so they need a bulb with the recommended color temp and lamp tone for task work. Astrid talked to a GE representative who told her that due to the size of some compact fluorescent bulb you need to pair incandescent bulbs to their compact fluorescent counter parts. So, Astrid's parents have asked her to purchase 40 watt incandescent equivalent bulbs that also are:

- energy efficient
- reduce the amount of heat in this room
- high illumination power

She has been given a budget of \$35 to replace all four bulbs in the ceiling fan. Astrid has come to you for help because she heard that you were also studying light bulbs. Help Astrid rank the following bulbs according to her requirements and request.

Lamp 1

Price (ea.)	\$6.26
Brand	GE
Base	Medium Screw (E26)
Item	Compact Fluorescent
Lamp Watts	10
Incandescent Equivalent –Watts	40
Voltage	120
Lamp Designation	FLE11/2/A19/XL
Lamp Shape	A19
Color Temp	2700 K
Color Rendering Index (CRI)	82
Lamp Tone	Soft White
Average Life- Hours	10,000
Initial Lumens	500
Mean Lumens	400
Length-inches	4.4
Min Starting Temp	5 F
ENERGY STAR® Qualified	Yes

- Integral Electronic Ballast, Not for Use on Dimmer Circuit
- Non-dimmable (unless noted)
- Not for use on electronic timers or photocells
- Product Contains Mercury, Refer To Applicable State Regulations for Disposition After Use



Lamp 2

Price (ea.)	\$8.72
Brand	GE
Base	Medium Screw (E26)
Item	Compact Fluorescent
Lamp Watts	20
Incandescent Equivalent –Watts	75
Voltage	120
Lamp Designation	FLE20HT3/2/D/CD
Lamp Shape	HLX (Helix),
Color Temp	4100 K
Color Rendering Index (CRI)	82
Lamp Tone	Soft White
Average Life- Hours	8000
Initial Lumens	1150
Mean Lumens	945
Length-inches	4.7
Min Starting Temp	5 F
ENERGY STAR® Qualified	Yes

- Integral Electronic Ballast, Not for Use on Dimmer Circuit
- Non-dimmable (unless noted)
- Not for use on electronic timers or photocells
- Product Contains Mercury, Refer To Applicable State Regulations for Disposition After Use



Lamp 3

Price (ea.)	\$6.69
Brand	GENERAL ELECTRIC
Base	Medium Screw (E26)
Item	Compact Fluorescent
Lamp Watts	11
Incandescent Equivalent –Watts	40
Voltage	120
Lamp Designation	Fle10ht3/2/841
Lamp Shape	HLX (Helix),
Color Temp	4100 K
Color Rendering Index (CRI)	82
Lamp Tone	Cool White
Average Life- Hours	10,000
Initial Lumens	550
Mean Lumens	450
Length-inches	4.4
Min Starting Temp	-10
ENERGY STAR® Qualified	Yes

- Integral Electronic Ballast, Not for Use on Dimmer Circuit
- Non-dimmable (unless noted)
- Not for use on electronic timers or photocells
- Product Contains Mercury, Refer To Applicable State Regulations for Disposition After Use



Lamp 4

Price (ea.)	\$1.02
Brand	GE
Base	Medium Screw (E26)
Item	clean, beautiful light®
Lamp Watts	40
Incandescent	Incandescent - A-line
Voltage	120
Lamp Designation	40A/CL/RVL 24PK
Lamp Shape	Standard
Color Temp	N/A
Color Rendering Index (CRI)	N/A
Lamp Tone	N/A
Average Life- Hours	1000
Initial Lumens	370
Lumens per Watt	9
Length-inches	4.4
Min Starting Temp	N/A
ENERGY STAR® Qualified	No



Consumer Decision Making Judging Contest

Category: Light Bulbs

Situation: Shine On – Light Bulbs

Year: 2008

Placing and Reasons: 3,1,2,4

Cuts: 1,3,4

Light Bulbs

Official

Placement:3-1-2-4

Cuts:1,3,4

1-2-3-4 - 45

1-2-4-3 - 37

1-3-2-4 - 49

1-3-4-2 - 45

1-4-2-3 - 33

1-4-3-2 - 37

2-1-3-4 - 42

2-1-4-3 - 34

2-3-1-4 - 43

2-3-4-1 - 36

2-4-1-3 - 27

2-4-3-1 - 28

3-1-2-4 - 50

3-1-4-2 - 46

3-2-1-4 - 47

3-2-4-1 - 40

3-4-1-2 - 39

3-4-2-1 - 36

4-1-2-3 - 26

4-1-3-2 - 30

4-2-1-3 - 23

4-2-3-1 - 24

4-3-1-2 - 31

4-3-2-1 - 28

In this class of Light Bulbs, I placed the choices 3-1-4-2, with a close placing top pair.

In the top pair, I placed 3 over 1, as 3 provided better laminations, the needed color temperature (4100K) and a (Cool White) lamp tone needed for task lighting at a lower price than 1. Both of the top pair is Compact Fluorescent and has an incandescent equivalent of 40 watts which will reduce the heat and energy needed.

In the middle pair, I placed 1 over 2 since 1 is an compact fluorescent 40 watt incandescent equivalent, is less expensive, and has a longer average life I grant that 2 is has a higher lamination.

Finally, I placed 2 over 4 in the bottom pair, as 2 is a compact fluorescent bulb which will last longer, produce less energy and heat. Bulb 2 also has a higher laminations power than bulb 4. I grant that 2 is a 40 Watt bulb and it is much less expensive to purchase, but it will cost more in energy to operation.

In summary, I placed this class of Light Bulbs 3-1-2-4.