

Grounds Equipment Operation

Contest Guidelines

The Grounds Equipment Operation contest includes the following:

1. General safety test (true/false and multiple choice)* covering:
 - a. Walk behind power lawn mower.
 - b. Gasoline powered line trimmer.
 - c. Gasoline powered edger.

2. The contestants will demonstrate for a judge the following:
 - a. The ability to prepare a lawn for mowing, edging and trimming.
 - b. The ability to demonstrate approved pre-start procedures for the three pieces of equipment (mower, trimmer, and edger).
 - c. The ability to properly start equipment.

Contestants are encouraged to explain their actions to the judge.

Each contestant must work independently and without assistance*. Any outside assistance may disqualify the contestant. Contestants will be kept in a holding area until their competition begins.

Scores from the written test and the skills demonstration will be combined for an overall score. All of the judge's decisions are final.

All power equipment will be provided by the host school. The contest chair will provide each school with information regarding the equipment being used by **December 1** for District and by **March 1** for State. However, contestants may bring their own equipment to use during the contest.

Contestants will be responsible for the following:

- Sturdy leather shoes or work boots
- Eye protection
- Ear protection
- Work gloves
- Appropriate clothes (long pants, no baggy clothing)
- Oil rag

**Students who communicate through an interpreter may use their interpreter during the skills demonstration. Students who require reading assistance may request to have the test read to them.*

Grounds Equipment Operation

Information Sheet

Clothing

- Clothing should be sturdy and snug fitting.
- Avoid loose-fitting jackets, pants, and shirts



Proper eye protection is a must. Non-fogging safety glasses, goggles or a face shield are recommended. Their use will greatly reduce the risk of eye injury.



Protect your hearing by wearing sound barriers like ear plugs or ear muffs.



Protect your hands with heavy-duty non-slip gloves.



Wear sturdy leather shoes with non-slip soles. Steel-toed boots are recommended. No bare feet or sandals.

Grounds Equipment Operation

Information Sheet

Before You Work

1. Be sure to read the owners manual before operating any power equipment.
2. Make sure you are dressed properly.
3. Make sure the equipment is in good working condition:
 - a. Always disconnect the sparkplug wire before you inspect the mower.
 - b. Check the oil (4-cycle only).
 - c. Check the air filter.
 - d. Check the blade, or trimmer line.
 - e. Check the grass catching bag for holes or signs of wear.
 - f. Make sure you have a full tank of fuel. Remember: a two-cycle engine uses a mixture of oil and gas, a four-cycle engine uses regular unleaded.
4. Inspect the area where you will be working:
 - a. Make sure there are no people or pets in the work area.
 - b. Pick up any loose objects, trash, or debris.
 - c. Spot all obstructions so that you can mow around them.

Edger

Changing the Edger Blade



1. Disconnect the sparkplug wire.
2. Use a wrench that snugly fits the blade nut.
3. Place a heavy cloth over the blade's cutting edge and hold the blade securely.
4. Turn the wrench in a counter-clockwise direction.
5. After removing the nut, washer, and blade; inspect the washer for excessive wear. Replace the washer if necessary.
6. Be sure to replace the nut, washer, and new blade in the proper sequence and tighten securely. If you are not sure of the sequence, refer to the owner's manual.

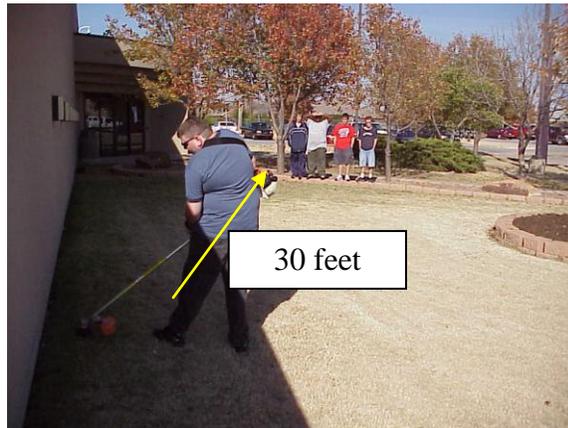
Grounds Equipment Operation

Information Sheet

Edger

Edger Safety

- Never operate the edger without all of the guards and shields in place.
- Dress properly to do the job safely.
- Always start the machine on even ground.
- Always use both hands.
- Keep the area of operation clear of all people and pets. Bystanders should remain at least 30 feet away.



- Never allow children to operate the edger.
- Don't leave the edger unattended while the engine is running.
- Always allow the engine to cool down before refueling.
- Always shut off the engine and disconnect the sparkplug wire before making any repairs, adjustments or cleaning.

Grounds Equipment Operation

Information Sheet

Mower



Spot all obstructions so that you can safely mow around them.



Gather up loose objects from the lawn. These can damage the blade and become dangerous projectiles.



Fuel up outdoors and away from the grass. Be sure to wipe up all spills. Never refuel a running or hot engine. If you have been mowing and you run out of gas, let the mower cool down for several minutes before you begin refueling.



Adjust the cutting height before you begin mowing.

Grounds Equipment Operation

Information Sheet

Mower



Check the oil. Make sure the oil is clean and reaches the fill line on the dip stick.



Inspect the blade for cracks and dents. When inspecting the blade, always tilt the mower with the carburetor in the air.

Mower Rules and Tips

- Always start the mower outdoors.
- Dress properly to do the job safely.
- Stay clear of the edge of the blade housing and discharge chute.
- The blade travels at 200 miles per hour, so don't forget to pick up loose debris from the mowing area.
- Stay away from the muffler and the cooling fins. They get very hot and can cause severe burns.
- Watch out for people and pets that may enter the work area. If someone enters your work area, stop and wait for them to leave the area before you continue working.
- If you are using an electric mower, be sure to plug it in to a three pronged outlet and be sure to keep the cord out of harm's way.
- Never leave a running mower unattended.
- Never pull a running mower towards your feet.
- Never tilt the mower while it is running.
- Cut across slopes so that the mower can't roll back on you.
- Don't overreach. Keep proper footing and balance at all times.
- Use extra care when changing directions.
- If you are bagging or mulching the grass clippings you still must wear safety glasses.

Grounds Equipment Operation

Information Sheet

Mower Rules and Tips

- Avoid mowing a wet lawn. The grass clippings will stick together and clog the underside of the mower.
- If the engine is cold, you will need to close the choke before trying to start the engine.
- Always overlap each pass by a few inches for an even lawn finish.

Trimmer

Trimmer Safety

- Dress properly to do the job safely.
- Always start the machine on even ground.



- Never touch the rotating part of a tool with your hand or any part of your body unless the sparkplug wire is disconnected.
- Children should never be allowed to operate power equipment.
- Use both hands when working with the trimmer.



- Never leave the trimmer running while unattended.

Contestant Name _____ Contestant Number _____

Grounds Equipment Operation

General Safety Test

Directions: Circle the correct answer.

1. T F When changing the edger blade, disconnect the spark plug first.
2. T F When removing the blade, place a heavy cloth over the blades cutting surface and hold it securely.
3. T F If the edger has a metal shield you do not need to wear safety glasses.
4. T F Always check the oil after you start the engine.
5. T F Fuel up outdoors, and then wipe up all spills.
6. T F Dress properly to do the job safely.
7. T F You may not have bare feet when you are mowing, but sandals are safe to wear.
8. T F Keep the area where you are working clear of all people and pets.
9. T F The only time you need to disconnect the spark plug on a mower is when you are going to be working around the blade.
10. T F Be alert and pay attention while you are mowing.
11. T F Never leave the edger unless you shut it off.
12. T F The mowers engine needs to be running while you check the blades and the cutting height.
13. T F You should shut off the engine and let it cool down before you refuel.
14. T F It is alright to operate an edger or trimmer if the safety guards are missing.
15. T F If you are using a mulching mower, you do not need to wear safety glasses.

Grounds Equipment Operation

General Safety Test

Directions: Circle the correct answer.

16. A wet lawn:
 - A. Can be cut.
 - B. Can be cut sometimes.
 - C. Should never be cut.

17. You should start the mower:
 - A. Outdoors.
 - B. In the garage.
 - C. On gravel.

18. Never push a running mower over:
 - A. Grass.
 - B. Gravel, stones, or obstructions.
 - C. Both of the above answers.

19. Loose objects on the lawn should be:
 - A. Mowed over.
 - B. Ignored.
 - C. Gathered up.

20. Spot all obstructions before you mow and remember to:
 - A. Raise your mower over them.
 - B. Mow around them.
 - C. Mow backwards over them.

21. Stay clear of:
 - A. The edge of the blade housing.
 - B. The discharge chute.
 - C. Both of the above.

22. Learn not to touch :
 - A. Hot parts.
 - B. Loose objects on the ground.
 - C. None of the above.

23. Whirling blade tips throw:
 - A. Gravel and stones.
 - B. Obstructions that are mowed over.
 - C. Both of the above.

24. What kind of electric cord and outlet will help prevent electric shock.
 - A. Forked
 - B. Three pronged
 - C. Foot

Grounds Equipment Operation

General Safety Test

Directions: Circle the correct answer.

25. In order to keep proper footing and balance at all times.
 - A. Never overreach
 - B. Always be alert
 - C. Pay attention

26. Never:
 - A. Leave the mower running unattended.
 - B. Touch hot parts.
 - C. Push a mower over loose objects.
 - D. All of the above.

27. Which direction should you never pull a mower?
 - A. Toward your feet
 - B. Forward
 - C. Away from you

28. How should you push a mower so that it cannot roll back on you?
 - A. Up the slope
 - B. Across the slope
 - C. Down the slope

29. Keep the mower flat on the ground; never tilt it while it is:
 - A. Shut off.
 - B. Cold.
 - C. Running.

30. Use extra care when you are:
 - A. Mowing.
 - B. Around others.
 - C. Changing directions.
 - D. All of the above

31. To prevent losing control of your mower what should you do?
 - A. Take your time
 - B. Wear gloves
 - C. Wear a hat

32. Your clothing should be:
 - A. Sturdy.
 - B. Snug fitting.
 - C. Both of the above

Grounds Equipment Operation

General Safety Test

Directions: Circle the correct answer.

33. What kind of engine do you start with the choke closed?
 - A. Gasoline
 - B. Cold
 - C. Hot
 - D. Both A and B
34. What do you protect with gloves.
 - A. Head
 - B. Hands
 - C. Eyes
35. To help reduce the risk of an eye injury, always wear:
 - A. Gloves.
 - B. Ear Mufflers.
 - C. Safety glasses or goggles.
36. What should you wear with non-slip soles?
 - A. Shoes
 - B. Jackets
 - C. Gloves
37. Protect your ears with:
 - A. Gloves.
 - B. Ear mufflers.
 - C. Safety glasses.
38. About how fast can the blade of a rotary power lawn mower spin?
 - A. 25 miles per hour
 - B. 100 miles per hour
 - C. 200 miles per hour
 - D. 1000 miles per hour
39. Before doing any maintenance on a power mower, it is most important to:
 - A. Put on work gloves.
 - B. Drain the fuel tank.
 - C. Disconnect or remove the spark plug.
 - D. Have the proper tools.
40. Where should you fuel a lawnmower?
 - A. In the garage
 - B. Outside
 - C. Outside, away from the grass
41. If you run out of gas while you are mowing, you should:
 - A. Refuel the mower right away.
 - B. Wait three minutes, and then fill with fuel.
 - C. Remove the mower from the grass, wait three minutes, and then refuel.

Grounds Equipment Operation

General Safety Test

Directions: Circle the correct answer.

42. The dead man's device on the mower is used for:
 - A. Starting the mower.
 - B. Making the mower self propelled.
 - C. Instantly disengaging the blade.

43. A four-cycle engine uses what type of fuel?
 - A. A mixture of oil and gas
 - B. Diesel
 - C. Regular unleaded

44. A two-cycle engine uses what type of fuel?
 - A. A mixture of oil and gas
 - B. Diesel
 - C. Regular unleaded

45. Before operating any power equipment, it is always a good idea to:
 - A. Take it apart to see how it works.
 - B. Read the owners manual.
 - C. Write your name on it so that everyone knows it's yours.

46. For an even lawn finish, the mower operator needs to:
 - A. Set the height adjustment on the lowest setting.
 - B. Set the height adjustment on the highest setting.
 - C. Overlap each pass by a few inches.

47. What is the main reason for using a mulching mower?
 - A. It's easier than bagging the grass clippings.
 - B. It gives the lawn a smoother finish.
 - C. It returns nutrients to the soil.

48. To help protect people and pets while trimming:
 - A. Keep people and pets out of the area.
 - B. Never leave the trimmer unattended.
 - C. Never hand the trimmer to another person while the trimmer is running.
 - D. All of the above.

49. When changing a mower blade it is important to tilt the mower with:
 - A. The front in the air
 - B. The carburetor in the air.
 - C. The carburetor towards the ground.

50. Which of the following locations is the safest for storing gasoline?
 - A. In the basement.
 - B. In a garage or tool shed.
 - C. In the trunk of a car.
 - D. In a metal cabinet that is labeled flammable.

Judges Sheet – Mower

Task		Score					Comments
Part Identification	Spark Plug	20	15	10	5	0	
	Dead Man Device	20	15	10	5	0	
	Rear Shield	20	15	10	5	0	
	Muffler	20	15	10	5	0	
	Blade Housing Deck	20	15	10	5	0	
	Height Adjustment	20	15	10	5	0	
Pre-Start	Unplugs Sparkplug Wire	20	15	10	5	0	
	Check Gas	20	15	10	5	0	
	Check Oil	20	15	10	5	0	
	Check Air Filter	20	15	10	5	0	
	Check Blade	20	15	10	5	0	
	Check Grass Catch Bag	20	15	10	5	0	
	Inspect Work Area	20	15	10	5	0	
Start-Up /Shutdown	Moves mower to sidewalk or driveway	20	15	10	5	0	
	Reconnects Sparkplug Wire	20	15	10	5	0	
	Sets throttle to proper position	20	15	10	5	0	
	Pulls starter chord rapidly	20	15	10	5	0	
	Returns starter chord slowly	20	15	10	5	0	
	Throttle down	20	15	10	5	0	
Proper Clothing	Boots/Shoes	20	15	10	5	0	
	Long Pants	20	15	10	5	0	
	Ear Protection	20	15	10	5	0	
	Eye Protection	20	15	10	5	0	
Total Score (460 possible)							

Judges Sheet – Edger

Task		Score					Comments
Part Identification	Spark Plug	20	15	10	5	0	
	Throttle Trigger	20	15	10	5	0	
	Blade Guard	20	15	10	5	0	
	Muffler	20	15	10	5	0	
	Fuel Tank	20	15	10	5	0	
	Height Adjustment	20	15	10	5	0	
Pre-Start	Unplugs Sparkplug Wire	20	15	10	5	0	
	Check Gas/Oil Mixture	20	15	10	5	0	
	Check Air Filter	20	15	10	5	0	
	Check Blade	20	15	10	5	0	
	Inspect Work Area	20	15	10	5	0	
Start-Up /Shutdown	Moves edger to even ground	20	15	10	5	0	
	Reconnects Sparkplug Wire	20	15	10	5	0	
	Sets throttle to proper position	20	15	10	5	0	
	Pulls starter chord rapidly	20	15	10	5	0	
	Returns starter chord slowly	20	15	10	5	0	
	Throttle down	20	15	10	5	0	
Proper Clothing	Boots/Shoes	20	15	10	5	0	
	Long Pants	20	15	10	5	0	
	Ear Protection	20	15	10	5	0	
	Eye Protection	20	15	10	5	0	
Total Score (420 possible)							

Judges Sheet – Trimmer

Task		Score					Comments
Part Identification	Spark Plug	20	15	10	5	0	
	Throttle Trigger	20	15	10	5	0	
	Line Guard	20	15	10	5	0	
	Muffler	20	15	10	5	0	
	Fuel Tank	20	15	10	5	0	
	Bump Button	20	15	10	5	0	
Pre-Start	Unplugs Sparkplug Wire	20	15	10	5	0	
	Check Gas/Oil Mixture	20	15	10	5	0	
	Check Air Filter	20	15	10	5	0	
	Check Trimmer Line	20	15	10	5	0	
	Inspect Work Area	20	15	10	5	0	
Start-Up /Shutdown	Moves trimmer to even ground	20	15	10	5	0	
	Reconnects Sparkplug Wire	20	15	10	5	0	
	Sets throttle to proper position	20	15	10	5	0	
	Pulls starter chord rapidly	20	15	10	5	0	
	Returns starter chord slowly	20	15	10	5	0	
	Throttle down	20	15	10	5	0	
Proper Clothing	Boots/Shoes	20	15	10	5	0	
	Long Pants	20	15	10	5	0	
	Ear Protection	20	15	10	5	0	
	Eye Protection	20	15	10	5	0	
Total Score (420 possible)							

Grounds Equipment Operation

Contestant Number _____

Score Sheet

Mower Score (460 possible)	
Edger Score (420 possible)	
Trimmer Score (420 possible)	
Written Test Score (100 possible)	
Total Score (1,400 possible)	

Contestant Name _____ **KEY** _____ Contestant Number _____

Grounds Equipment Operation

General Safety Test

Directions: Circle the correct answer.

1. **T** **F** When changing the edger blade, disconnect the spark plug first.
2. **T** **F** When removing the blade, place a heavy cloth over the blades cutting surface and hold it securely.
3. **T** **F** If the edger has a metal shield you do not need to wear safety glasses.
4. **T** **F** Always check the oil after you start the engine.
5. **T** **F** Fuel up outdoors, and then wipe up all spills.
6. **T** **F** Dress properly to do the job safely.
7. **T** **F** You may not have bare feet when you are mowing, but sandals are safe to wear.
8. **T** **F** Keep the area where you are working clear of all people and pets.
9. **T** **F** The only time you need to disconnect the spark plug on a mower is when you are going to be working around the blade.
10. **T** **F** Be alert and pay attention while you are mowing.
11. **T** **F** Never leave the edger unless you shut it off.
12. **T** **F** The mowers engine needs to be running while you check the blades and the cutting height.
13. **T** **F** You should shut off the engine and let it cool down before you refuel.
14. **T** **F** It is alright to operate an edger or trimmer if the safety guards are missing.
15. **T** **F** If you are using a mulching mower, you do not need to wear safety glasses.

Grounds Equipment Operation

General Safety Test

Directions: Circle the correct answer.

16. A wet lawn:
 - A. Can be cut.
 - B. Can be cut sometimes.
 - C. **Should never be cut.**

17. You should start the mower:
 - A. **Outdoors.**
 - B. In the garage.
 - C. On gravel.

18. Never push a running mower over:
 - A. Grass.
 - B. **Gravel, stones, or obstructions.**
 - C. Both of the above answers.

19. Loose objects on the lawn should be:
 - A. Mowed over.
 - B. Ignored.
 - C. **Gathered up.**

20. Spot all obstructions before you mow and remember to:
 - A. Raise your mower over them.
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 - C. Mow backwards over them.

21. Stay clear of:
 - A. The edge of the blade housing.
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 - A. **Hot parts.**
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23. Whirling blade tips throw:
 - A. Gravel and stones.
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 - C. **Both of the above.**

24. Plug an electric cord into a 3-_____ outlet to help prevent electric shock.
 - A. Forked
 - B. Pronged
 - C. Foot

Grounds Equipment Operation

General Safety Test

Directions: Circle the correct answer.

25. Don't _____; keep proper footing and balance at all times.
A. **Overreach**
B. Be alert
C. Pay attention
26. Never:
A. Leave the mower running unattended.
B. Touch hot parts.
C. Push a mower over loose objects.
D. **All of the above.**
27. Never pull a running mower _____ your feet.
A. **Toward.**
B. Forward.
C. Away from.
28. Cut _____ slopes with a push mower so that the mower cannot roll back on you.
A. Up
B. **Across**
C. Down
29. Keep the mower flat on the ground; never tilt it while it is:
A. Shut off.
B. Cold.
C. **Running.**
30. Use extra care when you are:
A. Mowing.
B. Around others.
C. Changing directions.
D. **All of the above**
31. Take your _____ when mowing; you could slip or lose control of the mower.
A. Time
B. Gloves
C. Hat
32. Your clothing should be:
A. Sturdy.
B. Snug fitting.
C. Both of the above

Grounds Equipment Operation

General Safety Test

Directions: Circle the correct answer.

33. Always start a _____ engine with the choke closed.
 - A. Gasoline
 - B. Cold
 - C. Hot
34. Protect your _____ with gloves.
 - A. Head
 - B. Hands
 - C. Eyes
35. To help reduce the risk of an eye injury, always wear:
 - A. Gloves.
 - B. Ear Mufflers.
 - C. Safety glasses or goggles.
36. Wear sturdy _____ with non-slip soles.
 - A. Shoes
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37. Protect your ears with:
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39. Before doing any maintenance on a power mower, it is most important to:
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 - B. Drain the fuel tank.
 - C. Disconnect or remove the spark plug.
 - D. Have the proper tools.
40. Where should you fuel a lawnmower?
 - A. In the garage
 - B. Outside
 - C. Outside, away from the grass
41. If you run out of gas while you are mowing, you should:
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 - A. Starting the mower.
 - B. Making the mower self propelled.
 - C. Instantly disengaging the blade.
43. A four-cycle engine uses what type of fuel?
 - A. A mixture of oil and gas
 - B. Diesel
 - C. Regular unleaded
44. A two-cycle engine uses what type of fuel?
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 - C. Never hand the trimmer to another person while the trimmer is running.
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 - B. The carburetor in the air.
 - C. The carburetor towards the ground.
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 - A. In the basement.
 - B. In a garage or tool shed.
 - C. In the trunk of a car.
 - D. In a metal cabinet that is labeled flammable.