

# Video Note Sheet

## Teacher Copy

### Brandon Hessenthaller:

1. **(0:30)** By reducing some of your passes, what is the benefit for you guys? It saves **fuel**, it saves **time**, and money. It saves everything.
2. **(1:30)** This field just came out of beans and will go back into what next fall? It will go into **barley** next spring.
3. **(3:10)** So you're reducing your **tillage** in both your pivot-irrigated and flood-irrigated fields? Yes.
4. **(3:20)** There was a pivot that we brought in on some **new ground** that has really **helped** the soil health.
5. **(4:00)** So do you have any fields that you graze? We do. Anything with a significant amount of **crop** residue we will put **cows** on it and let them graze.
6. **(4:25)** It's encouraging to see that it's not **costing** you anything. So to make these changes, did it require investing in any new equipment? The only new piece of **equipment** was the disc ripper.

### Farming by GPS:

1. **(0:10)** Farmer Brad Usetess is tilling razor straight lines with a **GPS-guided tractor**. With the computer in control, he barely has to steer.
2. **(0:25)** Hoses deliver **precise** amounts of fertilizer right into the grooves that the tiller cuts.
3. **(0:48)** Placing seed and fertilizer together with **centimeter precision** means fewer loads of fertilizer goes on the fields. You're able to use less, so of course, you're saving the **money**, and you're getting the same **performance** out of the crop.
4. **(1:25)** Jimmy Messic also uses **GPS** when he sprays weed killer. Before, he says it was easier to miss spots or overlap.
5. **(1:40)** GPS technology is **guiding** large-scale farm equipment across the country. Some harvesters also **monitor** how much crop is produced in each part of the field.
6. **(2:15)** It's hands-free technology that's saving **money** and saving the **environment**.



# Video Note Sheet

## Teacher Copy

### King Ranch:

1. **(0:53)** Kendall Roberts is a **2nd** generation rancher at the King Ranch.
2. **(1:33)** Our open spaces have provided so much for those **animals** and that they continue to come back.
3. **(1:40)** We're like everyone else. We like clean **water**, clean **air**, and have a place to live. You can't **abuse** your resources and expect to sustain a family.
4. **(2:28)** We have lots of **conservation** practices at the ranch. We try to use the wind and the **sun**. We use **solar** generation to pump water. I think what's important when it comes to the water is not only the quantity but also the **quality**.
5. **(3:33)** New irrigation has saved them **60%** of their power bill, **20%** on their water and produces the same results with incredibly less **labor**.
6. **(3:40)** You can always work the land so that it's **smarter** and not harder.
7. **(4:48)** Ranching does provide a great opportunity for land conservation, and land preservation and managing all those important factors like **water**, **grass**, and **open spaces**.

### Technology catches up to cows:

1. **(0:15)** This bovine has Marlene's **constant attention**, even when Marlene is not by its side.
2. **(0:25)** It can check it's **internal temperature**, and the outdoor temperature, how many steps they've taken, how many times she's come into water, and how far out in the pasture she is going. How exactly? Using these **ear tags**.
3. **(0:40)** One day she was visiting some ranchers and they started talking about their **big problem** which was **gathering data** from the animals tags when the animals were out in pasture. It's nearly impossible. Not anymore. With the help of **bluetooth technology**, cattle owners can learn much more about their cows and steers activity and health.
4. **(1:15)** When it comes to livestock, **technology** is making its presence felt more and more.
5. **(1:35)** Rancher Mark Fraiser uses this device to **manage** his cattle and most importantly their weight. Now I have the ability to track back and find which animals grew well for use and which animals didn't. I can use that in making **purchasing decisions**. That's something that just simply wasn't possible **15** or **20** years ago.



# Video Note Sheet

## Brandon Hessenthaler:

1. By reducing some of your passes what is the benefit for you guys? It saves \_\_\_\_\_, it saves \_\_\_\_\_, and money. It saves everything.
2. This field just came out of beans and will go back into what next fall? It will go into \_\_\_\_\_ next spring.
3. So you're reducing your \_\_\_\_\_ in both your pivot irrigated and flood irrigated fields? Yes.
4. There was a pivot that we brought in on some \_\_\_\_\_ that has really \_\_\_\_\_ the soil health.
5. So do you have any fields that you graze? We do. Anything with a significant amount of \_\_\_\_\_ residue we will put \_\_\_\_\_ on it and let them graze.
6. It's encouraging to see that it's not \_\_\_\_\_ you anything. So to make these changes did it require investing in any new equipment? The only new piece of \_\_\_\_\_ was the disc ripper.

## Farming by GPS:

1. Farmer Brad Usetess is tilling razor straight lines with a \_\_\_\_\_. With the computer in control he barely has to steer.
2. Hoses deliver \_\_\_\_\_ amounts of fertilizer right into the grooves that the tiller cuts.
3. Placing seed and fertilizer together with \_\_\_\_\_ means fewer loads of fertilizer goes on the fields. You're able to use less, so of course you're saving the \_\_\_\_\_ and you're getting the same performance out of the crop.
4. Jimmy Messic also uses \_\_\_\_\_ when he sprays weed killer. Before he says it was easier to miss spots or overlap.
5. GPS technology is \_\_\_\_\_ large-scale farm equipment across the country. Some harvesters also \_\_\_\_\_ how much crop is produced in each part of the field.
6. It's hands-free technology that's saving \_\_\_\_\_ and saving the \_\_\_\_\_.



# Video Note Sheet

## King Ranch:

1. Kendall Roberts is a \_\_\_\_\_ generation rancher at the King Ranch.
2. Our open spaces have provided so much for those \_\_\_\_\_ and that they continue to come back.
3. We're like everyone else. We like clean \_\_\_\_\_, clean \_\_\_\_\_, and have a place to live. You can't \_\_\_\_\_ your resources and expect to sustain a family.
4. We have lots of \_\_\_\_\_ practices at the ranch. We try to use the wind and the \_\_\_\_\_. We use \_\_\_\_\_ generation to pump water. I think what's important \_\_\_\_\_ when it comes to the water is not only the quantity but also the \_\_\_\_\_.
5. New irrigation has saved them \_\_\_\_\_ of their power bill, \_\_\_\_\_ on their water and produces the same results with incredibly less \_\_\_\_\_.
6. You can always work the land so that it's \_\_\_\_\_ and not harder.
7. Ranching does provide a great opportunity for land conservation, and land preservation and managing all those important factors like \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_.

## Technology catches up to cows:

1. This bovine has Marlene's \_\_\_\_\_ even when Marlene is not by its side.
2. It can check it's \_\_\_\_\_, and the outdoor temperature, how many steps they've taken, how many times she's come into water, and how far out in the pasture she is going. How exactly? Using these \_\_\_\_\_.
3. One day she was visiting some ranchers and they started talking about their \_\_\_\_\_ which was \_\_\_\_\_ from the animals tags when the animals were out in pasture. It's nearly impossible. Not anymore. With the help of \_\_\_\_\_, cattle owners can learn much more about their cows and steers activity and health.
4. When it comes to livestock, \_\_\_\_\_ is making its presence felt more and more.
5. Rancher Mark Fraiser uses this device to \_\_\_\_\_ his cattle and most importantly their weight. Now I have the ability to track back and find which animals grew well for use and which animals didn't. I can use that in making \_\_\_\_\_. That's something that just simply wasn't possible \_\_\_\_\_ or \_\_\_\_\_ years ago.



---

## Four Corners

---

# Farming





---

## Four Corners

---

# Ranching







---

## Four Corners

---

# Both





---

## Four Corners

---

# Neither





# Four Corners

## Example Sheet

Ranching	Farming	Both	Neither
Solar power to pump water for livestock	Crop rotation: planting crops in different fields each year	Manage land for use by livestock	Cattle graze the same pasture all year
Use ear tags to gather data about animals	Use GPS tractor to plant fields	Provide an opportunity for land conservation and management	Grow the same crop in one field for 10 years
Use bluetooth technology to detect sick livestock	Use technology to precision plant seeds and apply fertilizer to use less of each	Water conservation	Focus only on making money
Use technology to track animal growth		Share space with wildlife	Use as much fertilizer as possible on a field at inconsistent times



