



CANADA
4-H Ontario

www.4-hontario.ca

4-H ONTARIO PROJECT



Plowing

RECORD BOOK

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CANADA
4-H Ontario

THE 4-H PLEDGE

I pledge my Head to clearer thinking,
my Heart to greater loyalty,
my Hands to larger service,
my Health to better living,
for my club, my community, my country and my world.

THE 4-H MOTTO

Learn To Do By Doing

PROJECT RESOURCE INFORMATION

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Layout by: Lisa de Kleer
Date: March 2020



Thank you to the 4-H Plowing Advisory Committee members who assisted with the creation of this resource:

Brent Cochrane, Brant 4-H Association
Steve Speller, Elgin County, IPM Plowing Judge, 4-H Alumni
Donna Telfer, Director at Large, Ontario Plowmen's Association
Jest Sidloski, Director, Marketing & Customer Experience, Peavey Mart, TSC Stores & Mainstreet Hardware | Peavey Industries LP

4-H Ontario grants permission to 4-H Volunteers to photocopy this 4-H project resource for use in their local 4-H program.

All information presented in this Project Resource was accurate at the time of printing.

The development of this project resource was made possible through the support of funding provided by TSC Stores (Peavey Industries LP).

4-H Ontario is pleased to be able to provide project resource reference manuals for use by volunteers in clubs. 4-H Ontario screens and trains volunteers to equip them with the tools to serve as positive role models for youth. With so many topics to choose from, 4-H volunteers are trusted to use these resources to provide safe and quality programming while using their judgement to assess the appropriateness of activities for their particular group of youth. By downloading any 4-H resource, you agree to use it for 4-H purposes and give credit to the original creators. Your provincial 4-H organization may have restrictions on the types of 4-H projects or activities which can be completed in your region.



4-H Inclusion Statement

4-H in Canada is open to all* without discrimination based on race, national or ethnic origin, colour, religion, sex, age or, mental or physical disability.**

4-H is dedicated to providing a safe and inclusive environment that allows for universal access and participation. Where barriers to participation are identified, 4-H will, with reasonable accommodation, adapt programs, rules, policies, or expectations to reduce or remove the barriers.

Any accommodations, changes or exceptions will be assessed on an individual basis, taking into account the individual experience of the member and their family. The physical safety and emotional well-being of members, leaders, staff and volunteers is 4-H's highest priority, and is the ultimate consideration in final decisions.

4-H Canada and local 4-H organizations consider inclusion a priority. Leaders are encouraged to work with individuals and their families to identify and discuss accommodations as required, and to reach out to provincial or national office staff for help with unresolved concerns.

**This applies to youth members (ages 6 to 21), volunteers, leaders, staff and professionals.*

***Definition of discrimination as per Canadian Charter of Rights and Freedoms.*

Déclaration sur l'inclusion des 4-H

L'adhésion aux 4-H au Canada est ouverte à tous les jeunes* sans discrimination fondée sur la race, l'origine nationale ou ethnique, la couleur de la peau, la religion, le sexe, l'âge ou le handicap mental ou physique.**

Les 4-H ont pour mission d'offrir un environnement sécuritaire et inclusif qui permet l'accès et la participation de tous. Lorsque des obstacles à la participation sont décelés, les 4-H adapteront, à l'aide de mesures d'adaptation raisonnables, les programmes, les règles, les politiques ou les attentes afin de réduire ou d'éliminer ces obstacles.

Toute mesure d'adaptation, modification ou exception sera évaluée au cas par cas, en tenant compte de l'expérience personnelle du membre et de sa famille. La sécurité physique et le bien-être émotionnel des membres, des animateurs et des animatrices, des membres du personnel et des bénévoles sont la priorité absolue des 4-H et constituent le facteur ultime à considérer lors de la prise des décisions définitives.

Les 4-H du Canada et les organisations locales des 4-H considèrent l'inclusion comme étant une priorité. Les animateurs et les animatrices sont encouragés à collaborer avec les personnes et leurs familles afin de définir et d'examiner les mesures d'adaptation, selon les besoins, et de communiquer avec le personnel du bureau provincial ou national pour obtenir de l'aide en cas de préoccupations non résolues.

**Ceci s'applique aux jeunes membres (âgés de 6 à 21 ans), aux bénévoles, aux animateurs, aux membres du personnel et aux professionnels.*

***Selon la définition de discrimination en vertu de la Charte canadienne des droits et libertés*

RECORD KEEPING – WHY?

Record Books are to document time and money spent, what you have learned, your ideas, memories and what you liked and didn't like. Your Record Book also....

- Helps you set goals for this project
- Has space to record important dates, your elected executive and the names and contact information of your leaders and club members
- Is a great way to get and stay organized

Down the road when you look back on your 4-H projects these books will be able to remind you what you learned so you can use those skills later in life. It will bring back memories of the project, your 4-H friends, your story and thoughts at the time of the project. You will never forget because this book will act as a reminder! It will also be useful at the Achievement Program, when looking at your progress and when reviewing your accomplishments.

HOW DO I ORGANIZE MY MATERIALS?

1. Make your records neat and easy to read. This will make it easier to find information later on, and to share your information with others.
2. Use a three ring binder or duotang to hold your materials and divide your information into sections using dividers. This will keep things from becoming lost and will make it easier to find what you need later on. This will also allow you to add extra pages later.

HOW DO I KEEP GOOD RECORDS?

1. Keep track of activities throughout the meetings, as you complete different parts of the project. It's often difficult to remember things that happened in earlier meetings.
2. Make sure the information you write in your Record Book is complete and accurate. If you're not sure about something, ask your leader for help before writing it in your book.

You can also consult people in your community or do some research on your own. If you borrow information from someone or someplace else, make sure you write down where you found it.

**Remember that this is YOUR Record Book so make it your own!
And, remember to bring your Record Book to every meeting!**

WHO'S WHO

Club President: _____ Ph. #/E-mail: _____

Vice President: _____ Ph. #/E-mail: _____

Secretary: _____ Ph. #/E-mail: _____

Treasurer: _____ Ph. #/E-mail: _____

Club Reporter: _____ Ph. #/E-mail: _____

MEETING DATES:

	DATE & TIME	PLACE	NOTES (Things to bring, remember, etc)
MEETING 1			
MEETING 2			
MEETING 3			
MEETING 4			
MEETING 5			
MEETING 6			
ACHIEVEMENT PROGRAM			

LEADER NAME & CONTACT INFORMATION	LEADER NAME & CONTACT INFORMATION

MEMBER EXPECTATIONS AND GOALS

Why did you join the Plowing Project?

What is one goal that you want to learn about in this project?

Do you have any ideas for fun things to do during the project?

Do you have any ideas for an Achievement Program for the Plowing Project? (Keep in mind that an Achievement Program should include the community in some way).

MEMBER RESPONSIBILITIES

- Be a current paid member of 4-H Ontario
- Attend at least 2/3 of the meeting time allotted for this project
- Complete the Record Book for this project. Bring it with you to each meeting!
- Put your Record Book in a binder or duotang so you don't lose any of the pages.
- Complete any other projects as required by the club leaders.
- ***Remember the more you put into your 4-H club the more you will get out of it!***

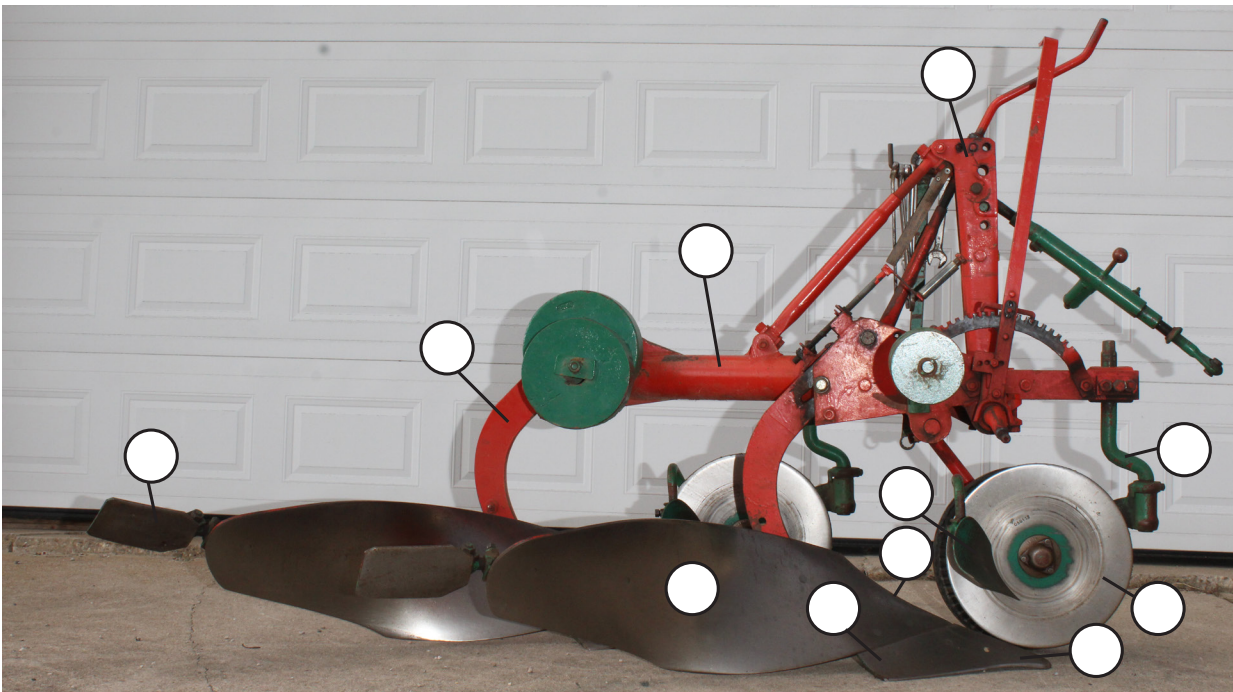
ROLL CALL

	ROLL CALL QUESTION	MY ANSWER
MEETING 1		
MEETING 2		
MEETING 3		
MEETING 4		
MEETING 5		
MEETING 6		
ACHIEVEMENT PROGRAM		

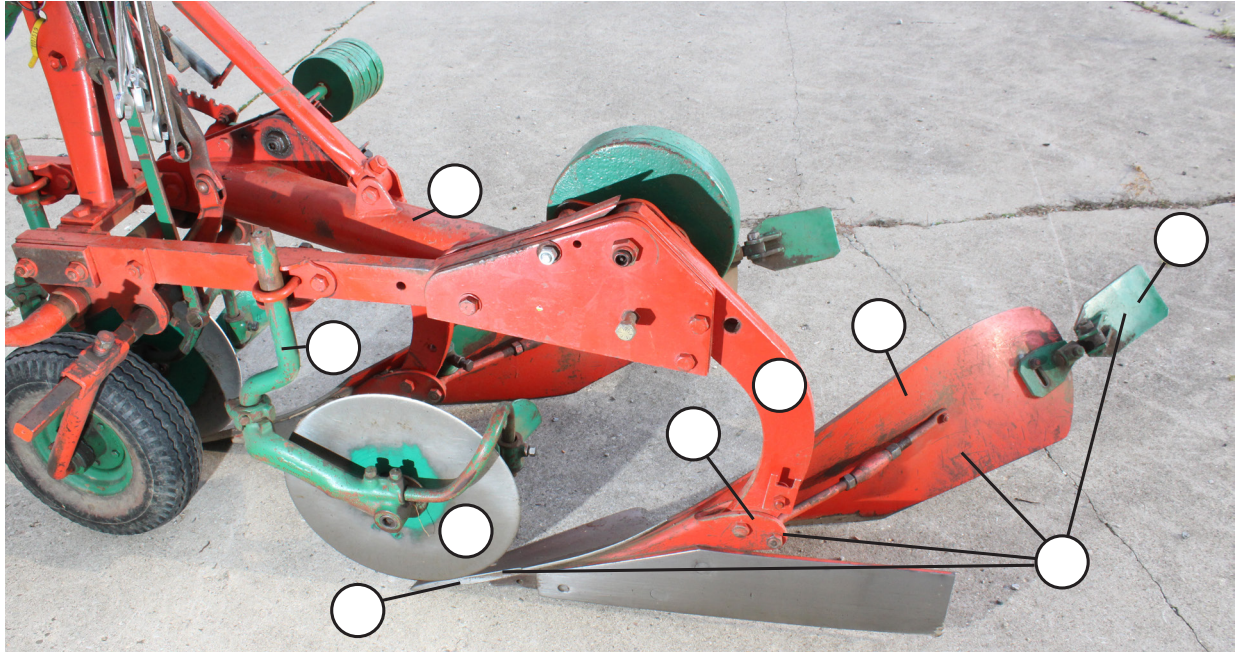
MEETING 1 - ACTIVITY 3: GETTING TO KNOW YOUR PLOW

Label the following parts of a plow in the images below:

1. Disc Coultter
2. Cross Shaft
3. Top Link Attachment Point
4. Coultter Stem
5. Beam
6. Skimmers or Thrash Boards
7. Shin
8. Landside
9. Wing
10. Moldboard
11. Share or Point
12. Frog
13. Plow Bottom



Source: Stephen Speller, Private Collection.



Source: Stephen Speller, Private Collection.

MEETING 1 - ACTIVITY 4: STOP-THINK-ACT

BEFORE AND DURING A TASK

Stop

- What could go wrong?

- How bad could it be?

- Has anything changed?

Think

- Do I clearly understand the task?

- Am I physically and mentally ready?

- Do I have the right tools and equipment?

Act

- Make it safe

- Use the right tools and procedures

- Reduce risks

Stop if it can't be done safely!

Source: <https://www.wsps.ca/Farm-Safety-Resources/Stop-Think-Act.aspx#>

MEETING 1 - ACTIVITY 5: JUDGING

Subject Being Judged: _____

Qualities you are looking for: _____

Item Being Judged/ Item Number/ Identifier	Placing	Reasons for Placing

THINGS TO REMEMBER WHEN JUDGING

1. Reasons should be short, clear and convincing.
2. Stand straight and look right at the person to whom you are speaking.
3. Start by naming the class and giving the order of placement.
4. Explain why you placed the first over the second, the second over the third, and the third over the last.
5. Never go back. Say everything you want to say about one placing and then move on to the next one.
6. Keep a clear picture in your mind of what you are judging.
7. Be positive. Talk about the important points that were better in each exhibit.
8. Don't be too hard on the exhibit that was the last. Talk about two or three things that were wrong and then quit.
9. Speak loudly enough for the judge to hear you and with confidence.
10. Know the right words to use and use them correctly. Don't get stuck using the same words over and over.
11. Always do your best.

MEETING 2 - ACTIVITY 6: DO YOU KNOW WHAT I MEAN BY...?

Write your explanations below and be prepared to share your answers with the group.

MEETING 2 - ACTIVITY 9: JUDGING OPEN SPLITS

One round shall be plowed to form the open split. Furrow slices are turned out such that when the crown is completed all land under the crown is moved. The open split is judged from twenty points in two categories -

STRAIGHTNESS (10 POINTS)

- All furrow slices and cut line shall be straight.

CUT & UNIFORMITY (10 POINTS)

- All sod/stubble shall be cut throughout the length and width of open split so that no uncut area will remain under crown furrow slices
- Each furrow slice shall (individually) be uniform throughout the length of the open split
- Neatness shall be considered a factor of uniformity

Lot No.	Straightness (10)	Cut & Uniformity (10)

MEETING 3 - ACTIVITY 12: JUDGING CROWNS

After completion of the open split, the next:

- 6 rounds, (one furrow plows)
- 4 rounds, (two furrow plows)
- 3 rounds, (three or more furrow plows)

constitute the crown. The complete crown is judged from forty point in four categories:

STRAIGHTNESS (10 POINTS)

- All furrow slices of crown shall be straight.

CLOSENESS & CONFORMITY (10 POINTS)

- All furrow slices shall fit tightly together with no openings (holes), particular attention paid to closeness of the first furrow slice on each side
- All furrow slices shall conform (match one another) as to height, width, shape, size and appearance
- Marking or distortion of furrow slice(s) caused by extensive paddle use shall adversely affect conformity score
- No tractor wheel mark
- Furrows shall start and end at scratch

BURYING GRASS & STUBBLE (10 POINTS)

- All grass, stubble and surface trash shall be completely covered

SOIL AVAILABILITY (10 POINTS)

- Shall be enough soil to produce seed bed with minimal secondary tillage
- Stipulated minimal depth shall be achieved by the sixth furrow
- Soil availability shall be affected by shallow furrows, open furrows, lack of conformity and or uniformity, and uncovered grass or stubble

Lot No.	Straightness (10)	Closeness & Conformity (10)	Burying Grass & Stubble (10)	Soil Availability (10)

MEETING 4 - ACTIVITY 13: WHAT'S YOUR SOIL?

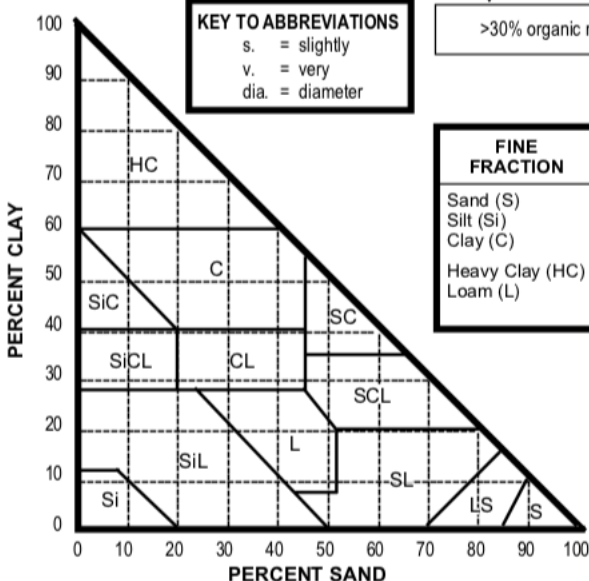
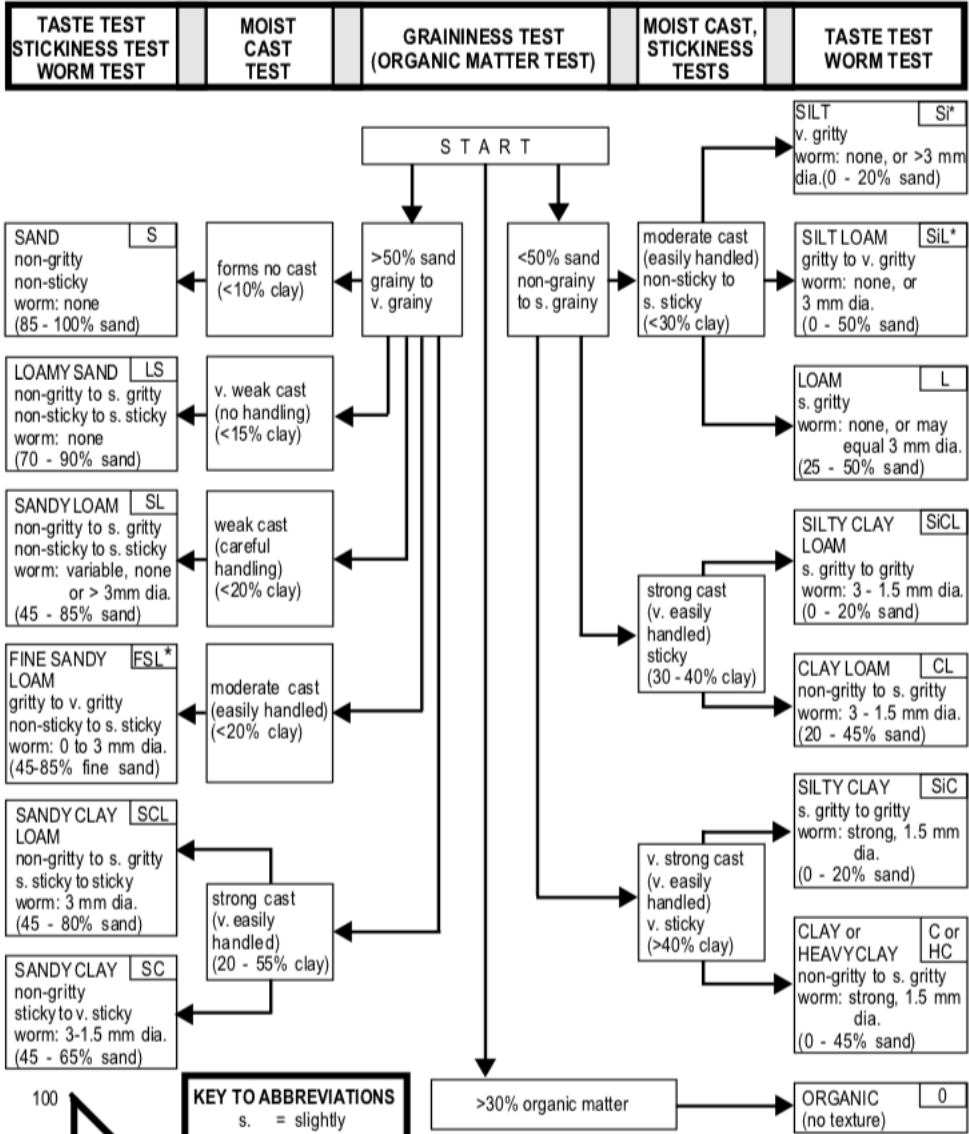
1. **Graininess Test** – Rub the soil between your fingers. If sand is present, it will feel “grainy”. Determine whether sand comprises more than 50% of the sample.

2. **Moist Cast Test** – Compress some moist soil by clenching it in your hand. If the soil holds together (i.e. forms a “cast”), then test the durability of the cast by tossing it from hand to hand. The more durable it is, the more clay is present.

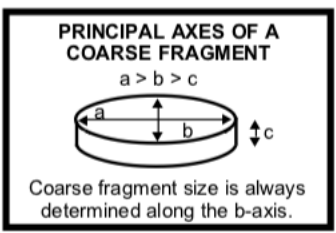
3. **Stickiness Test** – Wet the soil thoroughly and compress between thumb and forefinger. Degree of stickiness is determined by noting how strongly the soil adheres to the thumb and forefinger upon the release of pressure, and how much it stretches. Stickiness increases with clay content.

4. **Worm Test** – Roll some moist soil between the palms of your hands to form the longest, thinnest worm possible. The more clay there is in the soil, the longer, thinner and more durable the worm will be.

Use the flow chart on the handout to identify what kind of soil you have at home.



FINE FRACTION	PARTICLE DIAMETER	COARSE FRAGMENTS	PARTICLE DIAMETER
Sand (S)	2 - .05 mm	Stones	>250 mm
Silt (Si)	.05 - .002 mm	Cobbles	250 - 75 mm
Clay (C)	<.002 mm	Gravels	75 - 2 mm
Heavy Clay (HC)	>60% clay		
Loam (L)	Mix of sand, silt and clay		



* Silt feels slippery or soapy when wet; fine sand feels stiffer, like grinding compound or fine sandpaper.

MEETING 4 - ACTIVITY 16: JUDGING FINISHES & GENERAL APPEARANCE

FINISH

The finish consists of the last 12 furrows (i.e. 6 furrows of the cast-off side and 5 furrows plus the sole furrow on the crown side. The finish is judged from forty points in four categories:

Straightness (10 points)

- All furrows shall be straight.

Grass & Neatness (10 points)

- All grass, stubble and surface trash shall be completely covered
- Shall be no loose soil or trash in bottom of sole furrow
- Only one tire mark shall be allowed. Shall have neat appearance.

Shallowness & Narrowness (10 points)

- No step in tractor classes
- 4" step in horse classes
- Stipulated minimal depth shall be maintained until the last two rounds
- The final pass depth shall conform to average depth to complete land
- The allowed tire track shall carry on top of the furrow slice

Soil Availability & Conformity (10 points)

- Shall be enough soil to produce seed bed with minimal secondary tillage
- Sole furrow slice shall be $\frac{3}{4}$ to $\frac{7}{8}$ the height of previous furrows
- The allowed tire track shall carry on top of the furrow slice
- Soil availability shall be affected by shallow furrows, deep tractor track, open furrows, lack of conformity and/or uniformity, and uncovered grass or stubble

Lot No.	Straightness (10)	Grass & Neatness (10)	Shallowness & Narrowness (10)	Soil Availability & Conformity (10)

GENERAL APPEARANCE

After the judging of each of the areas is completed, the complete land is judged as to General Appearance. General appearance is judged from sixty points in six categories:

Straightness (10 points)

- All furrows shall be straight

Conformity (10 points)

- All furrow slices shall conform (match one another) as to height, width, shape, size and appearance, from scratch to scratch, across the complete plowed land
- No pairing

Distinctness of Furrow (10 points)

- Each furrow slice shall be clearly defined.

Uniformity and Shape of Furrow (10 points)

- Each furrow slice shall be neat, uniform in height, width, shape, size and appearance for the entire length of the plot
- Furrows shall start and end at scratch
- Furrow slices in stubble shall be well turned over with rounded top to provide sufficient soil availability
- Furrow slices in sod shall be turned through 135 degrees. In this position both the side and bottom of the furrow slice will lay 45 degrees to vertical

Shape of Land (10 points)

- Complete land shall have a clean, sharp, pleasing appearance
- Complete land shall show proper relationships to crown, to body of land, to finish

Ins and Outs (10 points)

- All soil inside of scratch furrows shall be turned within a minimum amount of head land being disturbed
- No furrow slice shall be turned outside the scratch
- Ins and outs shall be neat and clean
- No tire marks inside scratch

Lot No.	Straightness (10)	Conformity (10)	Distinctness of Furrow (10)	Uniformity and Shape of Furrow (10)	Shape of Land (10)	Ins and Outs (10)

International Plowing Match BMO Plowing Competition SCORE CARD

Date _____ CLASS _____ GROUP _____ FIELD _____ JUDGE _____ STEWARDS _____

Lot No.	SPLIT		CROWN			GENERAL WORK			FINISH				GENERAL APPEARANCE					Sub-Total	PENALTY	TOTAL	SCORE				
	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10					10			
	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	60				

Judging Guidelines – Conventional Plowing

OPEN SPLIT

One round shall be plowed to form the Open Split. Furrow slices are turned out such that when the crown is completed all land under the crown is moved. The open split is judged from twenty points in two categories:

Straightness (10 points)

- All furrow slices and cut lines shall be straight.

Cut & Uniformity (10 points)

- All sod/stubble shall be cut throughout the length and width of open split so that no uncut area will remain under crown furrow slices;
- Each furrow slice shall (individually) be uniform throughout the length of the open split;
- Neatness shall be considered a factor of uniformity.

CROWN

After completion of the open split, the next :

- 6 rounds, (one furrow plows)
- 4 rounds, (two furrow plows)
- 3 rounds, (three or more furrow plows)

constitute the Crown. The complete crown is judged from forty points in four categories:

Straightness (10 points)

- All furrow slices of crown shall be straight.

Closeness & Conformity (10 Points)

- All furrow slices shall fit tightly together with no openings (holes), particular attention paid to closeness of the first furrow slice on each side;
- All furrow slices shall conform (match one another) as to height, width, shape, size and appearance;
- Marking or distortion of furrow slice(s) caused by extensive paddle use shall adversely affect conformity score;
- No tractor wheel marks;
- Furrows shall start and end at scratch.

Burying Grass & Stubble (10 points)

- All grass, stubble and surface trash shall be completely covered.

Soil Availability (10 points)

- Shall be enough soil to produce seed bed with minimal secondary tillage;
- Stipulated minimal depth shall be achieved by the sixth furrow;
- Soil availability shall be affected by shallow furrows, open furrows, lack of conformity and or uniformity, and uncovered grass or stubble.

GENERAL WORK

All furrows plowed between the crown and the finish is the General Work. The general work is judged from 40 points in four categories:

Covering of Grass (10 Points)

- All grass, stubble and surface trash shall be completely covered.

Closeness & Packing (10 Points)

- All furrow slices shall be tightly closed and packed with no openings (holes);
- No wheel marks.

Firmness (10 Points)

- Furrow slices shall be firm and not collapse when stepped on,
- Firmness of structure and placement of furrow slice, not type of soil.

Soil Availability (10 Points)

- Shall be enough soil to produce seed bed with minimal secondary tillage;
- Stipulated minimal depth shall be maintained;
- Soil availability shall be affected by shallow furrows, open furrows, lack of conformity and/or uniformity, and uncovered grass or stubble.

FINISH

The Finish consists of the last 12 furrows. (i.e. 6 furrows of the cast-off side and 5 furrows plus the sole furrow on the crown side. The finish is judged from forty points in four categories:

Straightness (10 Points)

- All furrows shall be straight.

Grass & Neatness (10 Points)

- All grass, stubble and surface trash shall be completely covered;
- Shall be no loose soil or trash in bottom of sole furrow;
- Only one tire mark shall be allowed. Shall have neat appearance.

Shallowness & Narrowness (10 Points)

- No step in tractor classes;
- 4" step in horse classes;
- Stipulated minimal depth shall be maintained until the last two rounds;
- The final pass depth shall conform to average depth of complete land;
- Width of sole furrow shall conform to average furrow width of complete land;
- The allowed tire track shall carry on top of furrow slice.

FINISH (Continued)

Soil Availability & Conformity (10 Points)

- Shall be enough soil to produce seed bed with minimal secondary tillage;
- Sole furrow slice shall be $\frac{3}{4}$ to $\frac{7}{8}$ the height of previous furrows;
- The allowed tire track shall carry on top of furrow slice;
- Soil availability shall be affected by shallow furrows, deep tractor track, open furrows, lack of conformity and/or uniformity, and uncovered grass or stubble.

GENERAL APPEARANCE

After the judging of each of the areas indicated above is completed, the complete land is judged as to General Appearance. General appearance is judged from sixty points in six categories:

Straightness (10 Points)

- All furrow slices shall be straight.

Conformity (10 Points)

- All furrow slices shall conform (match one another) as to height, width, shape, size and appearance, from scratch to scratch, across the complete plowed land;
- No pairing.

Distinctness of Furrow (10 Points)

- Each furrow slice shall be clearly defined.

Uniformity and Shape of Furrow (10 Points)

- Each furrow slice shall be neat, uniform in height, width, shape, size and appearance for the entire length of plot;
- Furrows shall start and end at scratch;
- Furrow slices in stubble shall be well turned over with rounded top to provide sufficient soil availability;
- Furrow slices in sod shall be turned through 135°. In this position both the side and bottom of the furrow slice will lay 45° to vertical.

Shape of Land (10 Points)

- Complete land shall have a clean, sharp, pleasing appearance;
- Complete land shall show proper relationship of crown, to body of land, to finish.

Ins and Outs (10 Points)

- All soil inside of scratch furrows shall be turned with a minimum amount of head land being disturbed;
- No furrow slice shall be turned outside the scratch;
- Ins and outs shall be neat and clean;
- No tire marks inside scratch.

PROJECT SUMMARY – PLOWING PROJECT

A. MEMBER COMMENTS

1. What did you gain from taking this project?

2. Which meeting or topic was the most/least interesting? Why?

- a. Most?

- b. Least?

3. Comment and/or give suggestions for improvements on the overall project (eg. Activities, tours, achievement program plans, member presentations, special activities, judging information).

4. What interests would you like to explore through future 4-H projects?

B. PARENT/GUARDIAN COMMENTS:

C. LEADER COMMENTS:

THIS PROJECT HAS BEEN COMPLETED SATISFACTORILY!

Member: _____ Leader: _____

Date: _____ Leader: _____
