

COOPERATIVE EXTENSION WORK
IN
AGRICULTURE AND HOME ECONOMICS
STATE OF OKLAHOMA

D. P. TRENT, *Director*

OKLAHOMA AGRICULTURAL AND
MECHANICAL COLLEGE AND
UNITED STATES DEPARTMENT OF
AGRICULTURE, COOPERATING

EXTENSION SERVICE
COUNTY AGENT WORK
STILLWATER, OKLAHOMA

Distributed in Furtherance of the Acts of Congress of May 8 and June 30, 1914

Circular 264.

Revised 1929.

Club Series No. 40.

Outline of 4-H Farm Engineering Terracing Club Activities

By

G. E. MARTIN

Extension Agricultural Engineer

4-H FARM ENGINEERING

The importance of erosion control work in Oklahoma is more clearly recognized each year as our soil and plant food losses occur on an increasing scale. The benefits of moisture conservation have been clearly demonstrated by continuous experiments over several years carried on at Goodwell College in the Oklahoma Panhandle where an average crop increase of twenty-five per cent has been obtained over a four-year period by terracing. The success of erosion control and moisture conservation work depends upon individual ability in planning, constructing and maintaining effective terracing systems upon the farms of Oklahoma. Experience has proved that terracing is fundamental to the agricultural prosperity of our state.

Four-H Terracing Club work is intended to familiarize as many as possible of our young farmers with soil conservation and improvement practices. Another consideration is the help made available to adult farmers and non-resident land-owners in counties where well-trained 4-H members are available for hire.

Object. To bring a knowledge of soil and moisture conservation methods to those who recognize the importance of this information.

Goal. To make extension methods of erosion control and soil moisture conservation accepted as a necessary part of good farm practice throughout the State of Oklahoma.

Plan of Work. This work will be carried on cooperatively by County Agents, 4-H Teams, State Club Leaders, and the Extension Agricultural Engineering Specialists.

Four-H Teams will be governed by the rules for this work as laid down by extension authorities. Cooperate with county agent to the fullest extent possible. Make a study of and practice the teachings outlined in extension circulars applicable to the work such as Circular No. 175, 218, 219 and 224. Endeavor to maintain a high standard of personal efficiency with due regard to the importance of this work.

State Club Leaders will promote this phase among club members at club meetings. Encourage county agents to include this phase in club programs. Secure awards to winning teams such as are warranted by the worthiness of this work. Have a clear understanding with county agents regarding awards

available for this work. Maintain a close cooperative contact with the agricultural engineering specialist in all lines affecting this phase.

The Agricultural Engineering Specialists will, as their schedules permit, cooperate and assist in any of the work outlined to the fullest extent. Help conduct 4-H terracing schools. Help instruct 4-H teams in profile leveling. Conduct a state contest held during Farmers' Week by districts. Contest to be open to all counties in the state for No. 2 club members in terracing. Conduct state fair contests open to Farmers' Week contestants and to second-year men.

The County Agent will organize farm engineering teams. (Eligible members of horticulture and agronomy clubs should also undertake farm engineering work.)

Enlist any aid available in the county for promoting and carrying on the work, such as school teachers, bankers, civic organizations, etc., whose help in securing awards for teams winning in county contests, or in other ways is desirable.

Instruct teams in terracing theory and practice and require attendance at demonstrations as outlined in club rules and Circular 218.

Hold county contest to determine best team to compete at Farmers' Week contest.

Bring winning county team to Farmers' Week contest. Forward 4-H terracing reports to specialist in charge at Stilwater not later than September 15. Help 4-H farm engineering club members to secure employment from farmers, when the members are qualified to do terracing work. Help members outline demonstration material. Have a clear understanding with club leaders regarding prizes available at State contest to this work.

SUGGESTED CALENDAR OF WORK

January Organization of clubs	February Theory class and initial practice period	March Field practice at two terracing demonstrations	April Field practice at two terracing demonstrations
May Field practice at one terracing demonstration	June Teams continue field practice and county contest	July Teams continue field practice work up team demonstration	August State contest Farmers' Week
September Field practice 4-H report to specialist	October State fair contests	November Awards	December Organization of clubs

Suggestions for county agent terracing theory period, 4-H club work.
Discuss:

The highly competitive nature of present and future farming.

The relation of increased production to lowered costs.

The importance of fertile soil to increased production.

The importance of soil moisture to plant growth.

The importance of humus to soil moisture holding capacity. (Circular No. 218, p. 5.)

Erosion. What it is. (Circular No. 218, p. 6.)

Two forms of erosion. (Circular No. 218, p. 6.)

The object of terracing. (Circular No. 218, p. 5.)

The importance of terracing to profitable production in county or Oklahoma.

Explain: (Have level and rod to demonstrate with)

Level and rod, methods of setting up and use. (Circular No. 218, p. 9.)

Importance of properly adjusting level. (Circular No. 224, 218, p. 12.)

Importance of centering bubble. (Circular 218, p. 12.)

Use of cross hairs.

Use of target and rod. (Circular No. 218, pp. 8, 9 and 12.)

Importance of avoiding long level shots. (Cir. No. 218, p. 12.)

How to pass the level beyond the rod. (Circular No. 218, p. 11.)

How to test the level. (Circular 224.)

Discuss: (Have blackboard and crayon)

The first four steps in terracing:

4. Sizing up area. (Cir. No. 218, p. 8.)
2. Find the highest point of area and measure slope. (Cir. 218, p. 10.)
3. Consult guide table. (Cir. 218, pp. 10-11.)
4. Run trial line. (Cir. 218, p. 10.)

Vertical fall and grade. (Cir. 218, p. 13.)

Terrace dimensions. (Cir. No. 218, p. 15.)

Terrace outlets. (Cir. 218, p. 15.)

Common causes of terrace failure. Cir. No. 218, front cover and p. 18.)

Loss of height due to settlement of loose soil. (Cir. No. 218, p. 14.)

The modern terrace. What it is. (Cir. No. 218, p. 3.)

Plant food losses due to erosion. (Each year, 21 times the amount used by crops.)

The county agent should draw freely on local conditions and examples.

A two or three-hour period should be used in theory discussion.

RULES FOR 4-H FARM ENGINEERING CLUB WORK

Since erosion control is fundamental to successful farming over most of Oklahoma, it is desirable that all 4-H Club boys between 16 and 21 years of age enroll in Farm Engineering Terracing club work.

RULES FOR 4-H FARM ENGINEERING CLUB NO. 2

To compete in county and state contests, farm engineering club No. 2 members are required to:

1. Attend at least one theory class in terracing at the direction of the county agent.

2. To participate in five terracing demonstrations held by the county agent.

3. To make a study of and thoroughly understand the work of terracing as outlined in Extension Circular No. 218.

4. Each boy must be able to test the accuracy of a level by the method shown in Extension Circular No. 224.

5. Since no two terracing problems are exactly alike, each team must practice terrace line running in the field, in order to gain confidence in their ability to solve special problems. Each team should, during the year, satisfactorily lay out terrace lines for at least 100 acres of land.

6. Each team shall participate in a county elimination contest held by the county agent for the purpose of selecting the best team to represent the county in the Farmers' Week contest at Stillwater. This contest is an important part of the year's work. Club members should bring this rule to the attention of the county agent and arrange with him the date, time and place for the contest.

7. The winning team in the county contest must furnish the county agent with field notes made according to the form shown in Circular No. 224 covering a terracing project of not less than 40 acres which they have accomplished

without assistance. The field notes are to be forwarded with the properly filled 4-H terracing report to the Extension Specialist in charge of the work not later than September 15. Terracing report blanks are available from the Stillwater Extension office. As stated under 10, the field notes and terracing reports form part of the basis upon which state fair contestants are scored. Failure to comply with this rule reduces the contestant's total score.

8. Teams winning in county contests will compete by districts in the Farmers' Week state contest held at Stillwater in August for the purpose of selecting the best teams in each district to represent the district at the state fairs held during the fall.

9. A number of effective team demonstrations will be made possible by a study of Circular 218. The increased moisture holding capacity of soil due to humus content is one suggestion.

10. Teams winning in the county contests may compete at one of the state fair contests for prizes awarded to outstanding terracing club members of the state.

The contest held during Farmers' Week will be based upon Circular No. 218, and the part of Circular No. 224 referred to.

State Fair contest for Club No. 2 teams will be based upon Circular No. 218, and the parts of Circular No. 224 referred to, their record of work accomplished and their 4-H terracing report.

RULES FOR 4-H FARM ENGINEERING CLUB NO. 3

Farm Engineering Club No. 3 work is intended to carry 4-H members through more advanced work in farm engineering.

Four-H Engineering Club No. 3 membership is open to all who have previously competed in a Farmers' Week state contest in terracing, and who have not passed the age of 21.

To compete in the state events members are required to:

1. Attend at least one theory and one practice class in profile leveling under the direction of the county agent or specialist.

2. To participate in not less than three terracing demonstrations held by the county agent.

3. To act as coach to the team winning the county club No. 2 terracing contest.

4. Each member must be able to properly adjust a farm level by method given in Circular No. 224.

5. Each member must submit field notes covering one or more terracing projects for which they have been paid by farmers in their neighborhood. (County agents will assist in making contacts.)

6. Make a study of and thoroughly understand the work of profile leveling as outlined in Extension Circular No. 224.

7. Compete by districts in a state contest held during Farmers' Week at Stillwater for the purpose of selecting the two best men in each district to compete at state fair contest.

8. Members competing in the district contest may compete in state fair contest for awards to outstanding farm engineering 4-H members.

9. The contest held during Farmers' Week for No. 3 club members will be based upon Circular No. 218 and No. 224.

10. State fair contests for No. 3 club members will be based upon Circulars 218, 219 and 224. Record of work accomplished including the record as coach to No. 2 club teams and the 4-H report. See rule 7 for the club No. 2 members.