

Assessment Development Process

End-of-Grade, End-of-Course, NC Check-ins, and Grade 3 Portfolio

The test development process is a complex process that involves multiple checks and balances guided by testing experts and professionals. This process begins after new content standards are adopted by the North Carolina State Board of Education. This process includes multiple stakeholders who serve in advisory roles to the test development process including

- North Carolina Educators and Administrators;
- North Carolina Department of Public Instruction (NCDPI)–Standards, Curriculum, and Instruction Specialists;
- North Carolina State University–Technical Outreach for Public Schools (NCSU-TOPS) Content;
- NCSU-TOPS Exceptional Children, English Learners, and Visually Impaired Specialists;
- NCSU-TOPS Production, Editing, and Copyright Staff; and
- Outside Content-Specific Experts.

Prior to the test development process, the standards to be measured are defined during test specification meetings. North Carolina educators collaborate and develop recommendations for a prioritization of standards indicating the relative importance of each standard, the anticipated instructional time, and the appropriateness of the standard for test design for each content area. Subsequently, test development staff from the NCDPI meet with various advisors to review the recommendations from the teacher panels and to adopt final weight distributions across the domains for each grade level.

Once test specifications are adopted, item writers and reviewers complete training on the new subject-specific content standards. The training also includes an overview of item writing, sensitivity, and bias guidelines. North Carolina educators start the item development process by creating new items with various advisors (see bulleted list above) providing feedback on item quality throughout the 18-step test development process. The development process concludes with the NCDPI Test Measurement Specialist evaluating the recommendations from all advisors then finalizing and approving the item, reading selection, or test form.

Item Review Process

Step 1: Item Created

Test items are written by trained item writers, including North Carolina teachers, educators, curriculum specialists, and content specialists at Technical Outreach for Public Schools (TOPS) at North Carolina State University. All items are submitted through an online test development system. The item writer assigns the item

- a Clarifying Objective/Standard,
- a secondary Clarifying Objective/Standard (when appropriate),
- a Depth-of-Knowledge (DOK) rating (if applicable),
- a knowledge type and cognitive category (if applicable), and
- an Achievement Level Descriptor (ALD).

The item writer is also responsible for citing sources of any stimulus material used for an item.

Step 2: Item Evaluation

TOPS Content Specialists review the item for accuracy of content, appropriateness of vocabulary (both subject-specific and general), adherence to item writing guidelines, and sensitivity and bias concerns. All content specialists look for contexts that might elicit an emotional response and inhibit a student's ability to respond as well as contexts that students may be unfamiliar with for cultural or socioeconomic reasons. The specialists review the item's assigned

- Clarifying Objective/Standard,
- Secondary Clarifying Objective/Standard (if applicable),
- DOK rating (if applicable),
- Achievement Level Descriptor,
- Key/Distractors, and
- Knowledge type and cognitive category (if applicable) with the following possible results:
 - If the content of the item is not accurate or does not match an objective/standard, or if the DOK of the item is not appropriate, the item is revised or deleted.
 - If necessary, the specialist should edit the stem and foils of the items for clarity and adherence to established item writing guidelines.
 - If there are necessary revisions outside the technical scope of the specialist (such as artwork, graphs, or edits to reading selections), the item is moved to **Step 3** for edits by Production staff.
 - If the item contains stimulus material, the item is moved to **Step 3** for copyright checks by Copyright staff.

Once the item is accepted, the item is sent to **Step 4** (Teacher Content Review).

Step 3: Production Edits/Copyright Checks

Items needing revisions outside the technical scope of the Content Specialist (such as artwork, graphs, and reading selections) are revised by Production staff. Items with stimulus materials are reviewed by Copyright staff for copyright concerns and proper citation. Once the item is revised by Production staff or reviewed for copyrights, it is moved back to **Step 2** for another review by a Content Specialist.

Step 4: Teacher Content Review

Teacher item content reviewers are required to undergo the same training as item writers and must have content-specific knowledge. Two North Carolina trained item reviewers look for any quality issues or bias/sensitivity issues and suggest improvements, if necessary. The item writer at **Step 1** cannot review their items at **Step 4**. These trained reviewers evaluate the item in terms of

- alignment to grade-level content standard;
- content of item: accurate content, there is one and only one correct answer, appropriate and plausible context;
- cognitive category;
- being clearly written;
- motivated and plausible distractors;
- appropriate assigned achievement level descriptor;
- appropriate assigned depth of knowledge;
- design conforming to North Carolina item writing guidelines;
- appropriate language for the academic content area and age of students; and
- bias or sensitivity concerns.

Step 5: Content Review and Reconcile Teacher Content Reviews

A Content Specialist re-reviews the item for accuracy of content, appropriateness of vocabulary (both subject-specific and general), and checks to make sure the item is correctly keyed. The Content Specialist also reviews all comments/suggestions from the teacher reviewers and makes any appropriate revisions. The Content Specialist may choose one of the following options:

- Send the item to **Step 6** (Production) if there are revisions required that are outside the technical scope of the Content Specialist.
- Send the item to **Step 7** (EC/EL/VI) if the item is ready for the next stage of review.
- Send the item back to **Step 4** (Teacher Review) if major revisions are made to item for a new review.
- Delete the item.

Step 6: Production Edits

Items needing revisions outside the technical scope of the Content Specialist (such as artwork, graphs, and reading selections) are revised by Production staff. Once the item is revised by Production staff, it is sent back to **Step 5** for review by a Content Specialist.

Step 7: Exceptional Children (EC), English Learners (EL), and Visually Impaired (VI) Review

The EC/EL/VI specialist reviews the item for accessibility concerns for EC, EL, and VI students, such as accessibility of graphics for student with or without vision, and also considers accessibility in Braille. This review addresses concerns arising from bias or sensitivity issues, such as contexts that might elicit an emotional response and inhibit a student's ability to respond or contexts that students may be unfamiliar with for cultural or socioeconomic reasons. Review of reading level of the item is considered along with stem and foil quality (stem is a clear and complete question; foils are straightforward; no repetitive words; the grammar of the stem agrees with the foils; review modifying words and make suggestions for bold print and italics or removal; look for idioms and two-word verbs that may provide an accessibility issue for EL students). For Grade 3 Portfolio Items, a Literacy specialist evaluates each item for grade-level appropriateness.

Step 8: Reconcile EC/EL/VI Review

A Content Specialist reviews comments/suggestions from the EC/EL/VI reviewer and the Literacy reviewer for Grade 3 Portfolio, and makes any necessary revisions. The Content Specialist should indicate in the comments whether any comments/suggestions from the reviewer were not approved and incorporated. The Content Specialist may choose one of the following options:

- Send the item to **Step 9** (Production) if there are revisions required that are outside the technical scope of the Content Specialist.
- Send the item to **Step 10** (Grammar Review) for review.
- Send the item back to **Step 4** (Teacher Review) if major revisions are made to item for a new review.
- Delete the item.

Step 9: Production Edits

Items needing revisions outside the technical scope of the Content Specialist (such as artwork, graphs, and reading selections) are revised by Production staff. Once the item is revised by Production staff, it is sent back to **Step 8** for another review by a Content Specialist.

Step 10: Grammar Review

Professional editors review items for grammar, punctuation, and spelling. If the item had previously been sent back to **Step 8** by Editing, the editor should check that the suggested revisions were addressed. If the editor suggests revisions to the item, the item will move back to **Step 8** for review by a Content Specialist. If the editor approves the item as is, the item proceeds to **Step 11** (Security Check).

Step 11: Security Check

Production staff checks to make sure no duplicate copy of the item exists in the test development databases. If there is a duplicate copy of the item or a requested revision was not made, then the item is sent back to **Step 8**.

Step 12: Content Lead Review and Reconcile

Content Lead reviews the item and makes any necessary revisions and also reviews the item comment history to ensure all comments have been addressed. The Content Lead may choose one of the following options:

- Send the item to **Step 13** (Production) if there are revisions required that are outside the technical scope of the Content Lead.
- Move the item to **Step 14** (If approved, move item to **Step 14** NCDPI/Standards, Curriculum, and Instruction Review).
- Send the item back to **Step 4** (Teacher Review) or **Step 2** if major revisions are needed or made to an item.
- Delete the item.

Step 13: Production Edits

Items needing revisions outside the technical scope of the Content Lead (such as artwork, graphs, and reading selections) are revised by Production staff. Once the item is revised by Production staff, it is sent back to **Step 12** for review by the Content Lead.

Step 14: NCDPI/Standards, Curriculum, and Instruction Review

NCDPI/Standards, Curriculum and Instruction Specialists review the item and confirms a clarifying objective or a content standard. The reviewer evaluates the item in terms of

- alignment to grade-level content standard;
- presence of one and only one correct answer;
- the assigned Cognitive Process and Knowledge Type or Depth of Knowledge;
- the assigned Achievement Level Descriptor; and
- bias, sensitivity, or accessibility issues.

Step 15: Reconcile Standards, Curriculum, and Instruction Review

A Content Specialist reviews comments/suggestions from the NCDPI/Standards, Curriculum, and Instruction Specialist, and makes any necessary revisions. The Content Specialist may choose one of the following options:

- Send the item to **Step 16** (Production) if there are revisions required that are outside the technical scope of the Content Specialist.
- Send the item to **Step 17** (Grammar Review) for review.
- Send it back to **Step 2** if major revisions are needed or made to item.
- Delete the item.

Step 16: Production Edits

Items needing revisions outside the technical scope of the Content Specialist (such as artwork, graphs, and reading selections) are revised by Production staff. Once the item is revised by Production staff, it is sent back to **Step 15** for review by a Content Specialist.

Step 17: Grammar Review

Professional editors review items for grammar, punctuation, and spelling. If the item had previously been sent back to **Step 15** by Editing, the editor should check that the suggested revisions were addressed. If the editor suggests revisions to the item, the item will move back to **Step 15** for review by a Content Specialist. If the editor approves the item as is, the item proceeds to **Step 18** for the Test Measurement Specialist (TMS) review.

Step 18: NCDPI/Test Measurement Specialist Review

A NCDPI/TMS reviews for overall item quality. The TMS also checks that quality control measures have been followed by reading the comments from all previous reviews and verifying that the comments have been addressed by the Content Specialists. The TMS evaluates the item for

- alignment to grade-level content standard;
- verification there is one and only one correct answer;
- assigned Cognitive Process and Knowledge Type or Depth of Knowledge;
- bias, sensitivity, or accessibility issues;
- appropriate assigned achievement level descriptor; and
- the overall item quality.

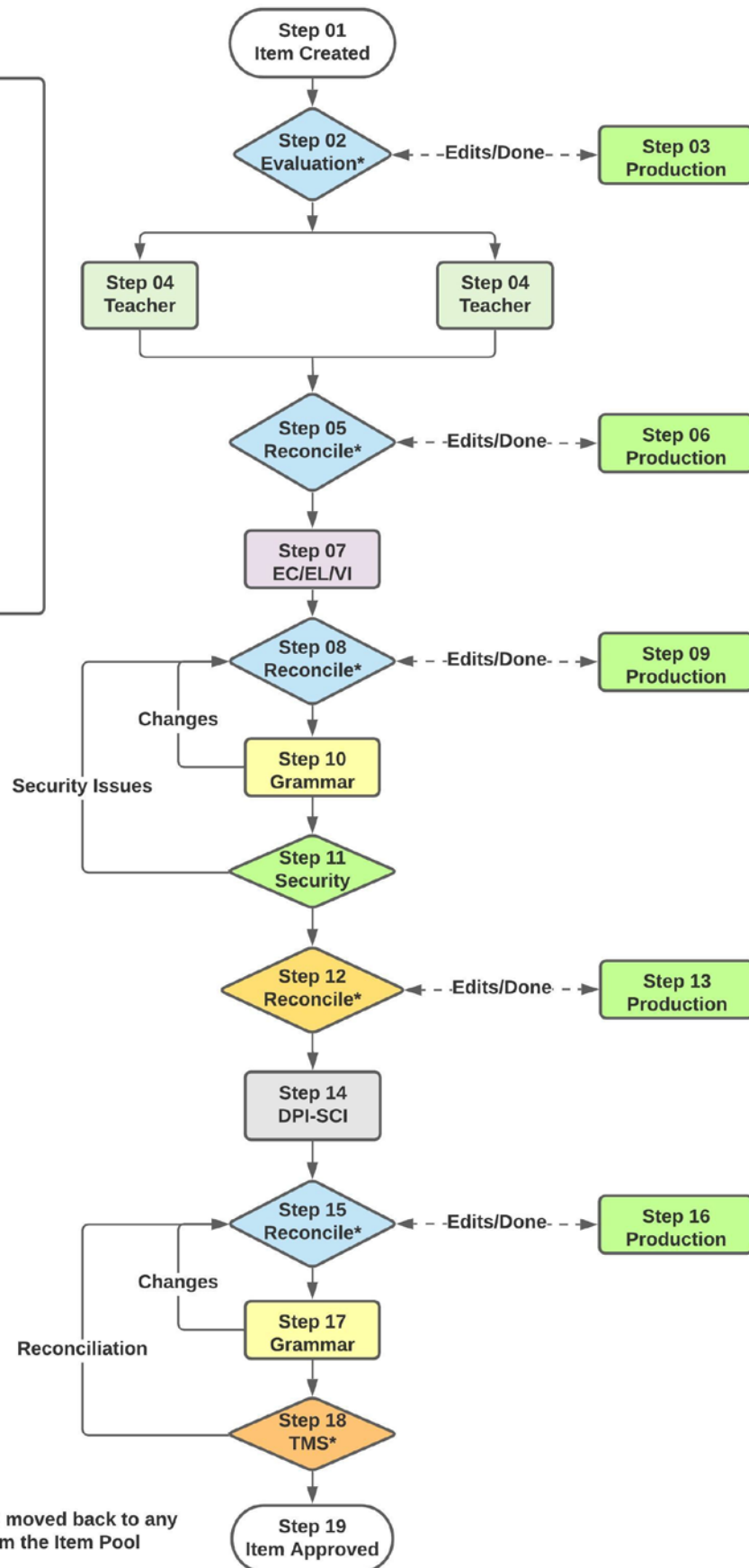
The TMS has four options when submitting the review:

- If the TMS approves the item as is, the item proceeds to **Step 19** (Item Approved).
- If the TMS indicates edits are needed, the item is moved back to **Step 15** for review by a Content Specialist.
- If TMS wants Standards, Curriculum, and Instruction to see the item again, the TMS moves the item back to **Step 14**.
- The TMS can delete the item.

Step 19: Item Approved

The item is now ready for placement on a form.

Item Review



Selection Review Process for End-of-Grade, End-of-Course, NC Check-ins, and Grade 3 Reading Portfolio

Prior to Step 1, the Reading Content Specialist searches for appropriate selections for each assigned grade using criteria from NCDPI/Test Development staff, NCDPI/Standards, Curriculum, and Instruction staff, and the North Carolina *Standard Course of Study*. The Reading Content Specialist also reviews the selections for any bias and sensitivity concerns.

Offline

Step 1: Folder Created

The Content Specialist creates a review folder for the selection. A Selection Form Submission tracking form is completed with the necessary copyright information (Content Specialist's name, date, title, author, source, excerpts, photographs, etc., as well as copyright date and ISBN, if applicable, and the selection's readability score), and is attached to the inside of the review folder. Any suggested edits are noted on the selection. A selection routing sheet is attached (includes grade level and title of selection) to the outside of the folder.

Step 2: Copyright Approval & Title/Author Search

Editing staff determines if the selection is public domain, gratis, or copyrighted (if copyrighted, determine whether the publisher may be used or if there is a concern, such as excessive expense) and searches all selection databases to determine if the selection is already in use.

Step 3: Content Approval

The Content Lead evaluates the selection in terms of

- alignment to grade-level expectations,
- content and length of the selection,
- readability of the selection,
- achievement level descriptors,
- bias or sensitivity concerns, and
- issues brought up by copyright review.

Based on review, the Content Lead can

- approve the selection as is,
- approve the selection with edits or additions (including edits to or addition of artwork), or
- delete the selection.

NOTE: If selection is included in the form, the Content Lead sends a new copy to the Copyright Staff so they can seek permission from the publisher.

Step 4: Exceptional Children (EC), English Learner (EL), and Visually Impaired (VI) Review

The EC/EL/VI reviewer evaluates the selection for accessibility concerns for EC, EL, and VI students in terms of

- concerns because of bias or sensitivity issues, such as contexts that might elicit an emotional response and inhibit a student's ability to respond and contexts that students may be unfamiliar with for cultural or socioeconomic reasons;
- accessibility of graphics for students with or without vision;
- appropriateness for Braille;

- prior knowledge required to understand the selection; and
- unfamiliar vocabulary that cannot be understood from the surrounding context.

Based on review, the EC/EL/VI reviewer can recommend to

- use the selection,
- use the selection with suggested edits, or
- not use the selection.

Step 5: NCDPI/Test Measurement Specialist Review

The NCDPI/Test Measurement Specialist (TMS) evaluates the selection in terms of

- alignment to grade-level expectations;
- content and length of the selection;
- readability of the selection;
- achievement level descriptors;
- any bias or sensitivity concerns including any raised by the EC/ESL/VI reviewer; and
- edits made by content at **Steps 1 and 3** or edits suggested in the **Step 4** review.

If the TMS rejects the selection, it is deleted from the pool. If the TMS approves the selection, it is moved to **Step 6**.

Step 6: Prepare for Online

Issues noted in EC/EL/VI and TMS reviews are reconciled by a Content Specialist, and the selection is sent to production to be entered into the online test development system.

NOTE: If any edits or additions are made to the selection (including edits to or addition of artwork), the Content Specialist sends a new copy to the Copyright Staff so they can seek permission from the publisher if copyrighted should the selection be designated for inclusion in a test form.

Online Test Development System

Step 1: Selection Created

Production staff performs another selection security check and enters the selection into the test development system.

Step 2: Compare Original

Editing staff compares the original copy of the selection to what has been entered into the test development system and indicates any necessary corrections. The corrections may arise from discrepancies between the TDS and the original or from correctable errors in the original, such as grammatical errors, misspellings, or archaic/foreign spelling of words.

Step 3: Creation Reconcile

A Content Specialist resolves corrections indicated in **Step 2**.

Step 4: Creation Edits

Production makes requested changes and selection is sent back to **Step 3** for a Content Specialist to confirm requested changes have been made to selection.

Step 5: NCDPI/Standards, Curriculum, and Instruction Review

A NCDPI/Standards, Curriculum, and Instruction Specialist reviews the selection. The reviewer evaluates the selection in terms of

- alignment to grade-level expectations;
- content and length of the selection;
- readability of the selection; and
- bias or sensitivity concerns.

Step 6: NCDPI/Test Measurement Specialist Review

The NCDPI/Test Measurement Specialist (TMS) does a final review on the selection and reviews all comments from the NCDPI/Standards, Curriculum, and Instruction Specialist. The TMS either approves the selection (with comments regarding revisions, if any) or deletes the selection from the pool.

Step 7: Reconcile Curriculum and Instruction Review and Test Measurement Specialist Review

A Content Specialist reviews any comments/changes requested by Standards, Curriculum, and Instruction or by the Test Measurement Specialist and sends changes to **Step 8** (Production) to be made, if necessary. Once any changes are made, the selection is sent to **Step 9**.

NOTE: If the selection is designated for inclusion on a test form, any edits or additions are made to the selection (including edits to or addition of artwork). The Content Specialist then sends a new copy to the Copyright Staff if permission is needed from the publisher.

Step 8: Production Edits

Production makes requested changes and selection is sent back to **Step 7** for a Content Specialist to confirm requested changes have been made.

Step 9: Selection Approved

Selection is now ready to have items written.



Form Review Process for End-of-Grade, End-of-Course, NC Check-ins, and Grade 3 Reading Portfolio

Prior to Step 1, a NCDPI/Psychometrician chooses the test items for the initial placement of the preliminary base form, taking key balance into consideration.

Step 1: Upload Form

A Psychometrician creates the form, and uploads a file listing the Item IDs to populate the form. The form is sent to **Step 3** for form review. Forms can come back to this step from **Step 3** with suggestions for replacements, or from **Step 4** with suggestions for replacements or revisions (either concerning the content of the item or for key issues). The Psychometrician can replace items or incorporate revisions. The Psychometrician sends the form to **Step 2** (Production Edits) for revisions to artwork, graphs, or reading selections.

Step 2: Production Edits

Revisions to operational items such as artwork, graphs, and reading selections are made by Production staff. If any revisions are made, the form is sent back to **Step 1** for review by a Psychometrician.

Step 3: Form Review

A Content Specialist reviews the items on the form for content alignment and quality of content and reviews the form for conflicts or repetition of content.

If any items are replaced because of concerns regarding conflicts or repetition of content among items, or for quality concerns, the Content Specialist sends the form back to **Step 1** with comments for the Psychometrician. Otherwise, the form is sent to **Step 4** for Test Measurement Specialist Review.

Step 4: NCDPI/Test Measurement Specialist Review/Key Balance

This review step is conducted to ensure that the form is ready for Outside Content-Specific Expert Review and Key Check (i.e., the form is ready to send to printer) and considers both item- and form-level quality as follows:

- The Test Measurement Specialist (TMS) reviews each item, including any comments. Suggestions for revisions to items are made as needed.
- After reviewing the quality of each item, the form is evaluated in terms of cueing, repetition, content coverage, and balance across Depths of Knowledge and Types/Cognitive Processes.
- The key balance of the form is checked. If the key balance needs adjusting, these suggestions are made by the NCDPI/TMS and the form is returned to **Step 1**.

After reviewing each item, the TMS adds any form-level comments and suggested improvements, and they can

- send the form back to **Step 1** with suggestions for replacements or revisions,
- move the form to **Step 5** (Reconcile), or
- delete the form from the pool.

Step 5: Reconcile by Content Specialist

The Content Specialist reviews the form comments to ensure any suggested replacements or revisions have been addressed and that any approved replacements or revisions have been made correctly. If any replacements or revisions need adjusting, the Content Specialist moves the form back to **Step 1** with comments. Otherwise, the form moves to **Step 6** (Outside Content-Specific Expert Review and Key Check).

Step 6: Outside Content-Specific Expert Review and Key Check

At this step, the form is sent for Outside Content-Specific Expert Review and Key Check. Outside Content-Specific Experts review the form by answering each item, selecting the correct answer and providing any comments and/or suggestions about the item. They verify that the item is presented correctly and that the answer to the item is correct and they provide overall suggestion about item quality. (Outside content-specific experts are not involved in creating any item. They are not affiliated with NCDPI or NCSU-TOPS agencies and serve as objective, independent reviewers. These experts must have verified credentials and experience in their subject matter area and be approved by NCDPI as content experts.)

Step 7: Reconcile Outside Content-Specific Expert Review

A Content Specialist checks the keyed response from the Outside Content-Specific Expert Review against the key for each item and reviews all comments and/or suggestions from the Outside Content-Specific Expert. Any key disagreements are reconciled, and any comments and/or suggestions from the Outside Content-Specific Expert are addressed.

Step 8: NCDPI/Psychometric Review/Key Balance

A Psychometrician performs the following:

- reviews comments/suggestions from the Outside Content-Specific Expert and from Editing staff, with consultation with the TMS and Content Specialists;
- checks key agreement with the Outside Content-Specific Experts and resolves any disagreements through consultation with the TMS and Content Specialists;
- makes any approved revisions, or indicates revisions for Production staff to make, and sends the form to **Step 9** (Production Edits); and
- reloads the form if any items are replaced at **Step 8**.

Step 9: Production Edits

Revisions to items outside the technical scope of the Psychometrician (items such as artwork, graphs, and reading selections) are made by Production staff. Once the revisions are made, the form is sent back to **Step 8** for review by a Psychometrician.

Step 10: Grammar Review

Two editors independently review the form for grammatical and/or formatting issues, providing comments and/or suggestions as needed.

Step 11: Content Lead Review/Finalize Form

The Content Lead reviews the form comment history to ensure all comments have been addressed and consults with VI specialist regarding accessibility issues. After reviewing the form, the Content Lead

- moves the form back to **Step 8** if any edits to operational items need review or
- approves the form and moves it to **Step 12** (Item Placement) for cloning and embedding or

- approves the form and moves it to **Step 21** (Final Manager Review) when the form is not being cloned or embedded.

Step 12: Item Placement

A Content Specialist places approved items in the embedding slots. The Content Specialist needs to check that

- the placed items match the layout files for the version of the base form;
- the quality of items embedded is appropriate for experimental use;
- the items do not cue operational items or other embedded items;
- the items diversify topic coverage across content;
- the keys of the embedded items do not create an unbalanced key for the overall form and the overall difficulty level of the items; and
- the Achievement Level Descriptor and Depth of Knowledge or Knowledge Type/Cognitive Process are consistent with the surrounding base form.

After placing the items, the Content Specialist may choose one of the following options:

- Send the form to **Step 13** (Production Edits) for revisions to artwork, graphs, or reading selections.
- Send the form to **Step 14** (Cueing Check).
- Delete the form.

Step 13: Production Edits

Revisions to embedded experimental items such as artwork, graphs, and reading selections are made by Production staff. Once the revisions are made, the form is sent back to **Step 12** for review by a Content Specialist.

Step 14: Cueing Check

The Content Specialist and TMS review the entire form to check that the embedded items do not create cueing or repetition issues, the embedded items diversify topic coverage across content, and that the embedded items' quality is acceptable. The TMS also makes sure the key balance is adequate. TOPS EC/EL/VI also looks over the embedded items to make sure that there are not any accessibility issues. TOPS EC/EL/VI makes a recommendation whether the form should be used for Braille. After the review, the Content Specialist can replace or revise embedded items based on the review. The Content Specialist then moves the form to **Step 15** for Outside Content-Specific Review/Grammar check.

Step 15: Outside Content Expert Review Key Check and Grammar Check

An Outside Content-Specific Expert and Editing staff member each review the embedded items. The Outside Content-Specific Expert reviews the embedded items by working and answering each item and providing any comments or suggestions as needed. Editing staff reviews the items for any grammar, punctuation, spelling issues, and/or formatting issues, providing comments and/or suggestions as needed.

Step 16: Reconcile by Content Specialist

A Content Specialist checks the keyed response from the Outside Content-Specific Expert Review against the key for each item and reviews all comments and/or suggestions from the Outside Content-Specific Expert. Any key disagreements are reconciled and any comments and/or suggestions from the Outside Content-Specific Expert are addressed. The Content Specialist also reviews suggestions from Editing staff and makes any necessary revisions.

If any items require substantial revisions, the item should be replaced and the form sent back to **Step 15**.

The Content Specialist can

- send the form to **Step 17** (Production Edits) for needed revisions,
- send the form to **Step 18** (TMS Final Review), or
- delete the form.

Step 17: Production Edits

Revisions to embedded experimental items such as artwork, graphs, and reading selections are made by Production staff. Once the revisions are made, the form is sent back to **Step 16** for review by a Content Specialist.

Step 18: Test Measurement Specialist Final Review

The TMS reviews the form, considering the comments from the **Step 15** reviews to ensure all comments have been addressed properly. The key balance of the form is checked. The TMS makes any needed edits to items. The TMS sends the form to **Step 19** (Production Edits) if any revisions are needed to artwork, graphs, or reading selections. Then the TMS sends the form to **Step 20** (Final Grammar).

Step 19: Production Edits

Revisions to operational items such as artwork, graphs, and reading selections are made by Production staff. Once the revisions are made, the form is sent back to **Step 18** for review by the TMS.

Step 20: Final Grammar Review

An Editor reviews the entire form for grammatical and/or formatting issues, providing comments and suggestions as needed.

Step 21: Final Manager Review

A Content Manager reviews comments/suggestions from the Final Grammar Review or **Step 24** (Compare) and makes any necessary revisions to embedded items. The Manager checks the form for overall quality and reviews the form comment history to ensure all comments have been addressed. The Content Manager ensures that the VI review was completed at **Step 11**.

After reviewing the form, the Content Manager may choose one of the following options:

- Approve the form and send it to **Step 23** (Audio Approval) if the form will be administered online.
- Approve the form and send it to **Step 24** (Compare) if the form will be administered on paper.
- Send the form to **Step 20** (Psychometrician) if there are suggested revisions to operational items for the Psychometrician to consider.
- Send the form to **Step 22** (Production Edits) for revisions to artwork, graphs, or reading selections.
- Reject the form.

Step 22: Production Edits

Revisions to embedded experimental items such as artwork, graphs, and reading selections are made by Production staff. Once the revisions are made, the form is sent back to **Step 21** for review by a Content Manager.

Step 23: Audio Approval

Content Specialists review the audio for each item and either approves the audio or indicates it needs a correction. After the audio for all items have been approved, the form is sent to **Step 24** (PDF/Online Check).

Step 24: PDF/Online Check

At this step, Production staff exports the form as a document and formats the document per formatting guidelines. The form is placed in a folder with a signoff sheet for the following tasks:

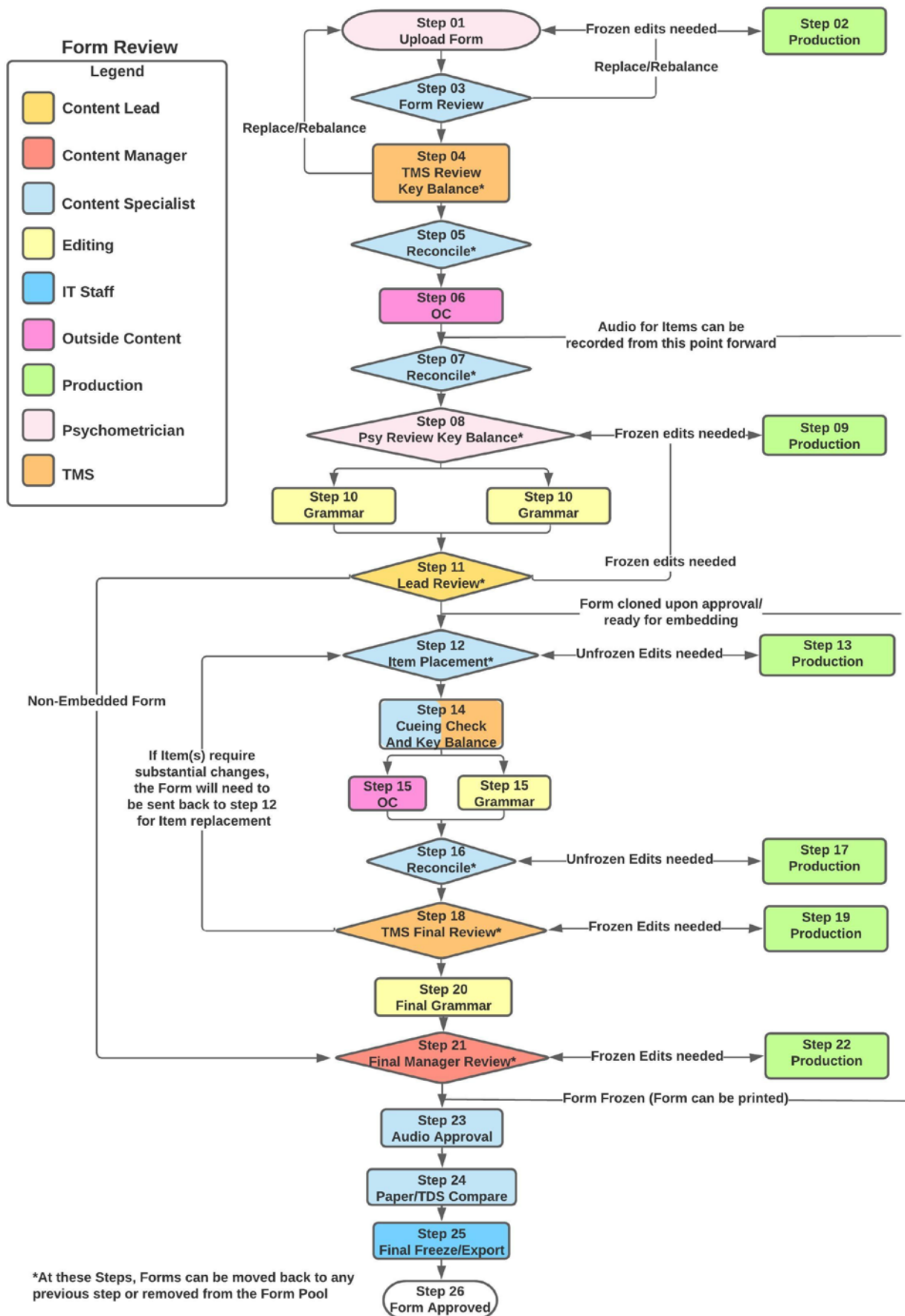
- Two Editors review the form for formatting concerns as well as any grammatical issues.
- A Content Specialist reviews the form for content and evaluates any comments and or suggestions from Editing reviews. If there are any edits to embedded items to execute in the online test development system, the Content Specialist indicates with each item what edits are approved and sends the form back to **Step 21**. Any suggestions that are rejected should be noted in the form comments. Any suggested edits to operational items that Content staff feel warrant consideration are directed to the TMS and Psychometrician for consideration.
- A Content Manager makes any approved edits in the online test development system and sends the form to **Step 23** for recorded online forms or **Step 24** for unrecorded or paper-only forms.
- After production staff makes corrections to the paper copy, the file is converted to a PDF and printed. The printed copy undergoes the same review as bullets 1–3 above.
- After the PDF of the form is approved, the form is sent to **Step 25** (Final Freeze/Export). If the forms are also offered online, the online forms will also be sent to **Step 25**.

Step 25: Final Export

The form, all items, and any selections are operationally locked to prevent any revisions. This is to ensure that the published versions of the form, items, and selections are preserved electronically. Any online forms undergo checks in a variety of platforms to ensure that each item's content displays correctly and audio files for non-reading subjects read correctly.

Step 26: Form Approved

The form is approved for administration.



Item Development Process for the NCEXTEND1 Alternate Tests

Prior to **Step 1**, the standards to be measured must be defined. The test development process begins after new content standards are adopted by the North Carolina State Board of Education. All item writers and reviewers are required to complete training modules. The training includes a general course on item writing guidelines, including lessons on sensitivity and bias concerns. The writers and reviewers must also complete subject-specific courses on the Extended Content Standards.

Step 1: Item Created

Test items are written by trained item writers, including North Carolina teachers, educators, curriculum specialists, and content specialists at Technical Outreach for Public Schools (TOPS) at North Carolina State University. All items are submitted through an online test development system. The item writer assigns the item

- an Extended Content Standard,
- a secondary Clarifying Objective/Standard (when appropriate),
- a Depth-of-Knowledge (DOK) rating (if applicable),
- a knowledge type and cognitive category (if applicable), and
- an Achievement Level Descriptor (ALD).

The item writer is also responsible for citing sources for any stimulus material used for an item.

Step 2: Item Evaluation

Content Specialists review the item for accuracy of content, appropriateness of vocabulary (both subject-specific and general), adherence to item writing guidelines, and sensitivity and bias concerns. All Content Specialists (subject and the EC/EL/VI specialist) look for contexts that might elicit an emotional response and inhibit students' ability to respond as well as contexts that students may be unfamiliar with for cultural or socioeconomic reasons. The specialists review the item's assigned

- Clarifying Objective/Standard,
- Secondary Clarifying Objective/Standard (if applicable),
- DOK rating (if applicable),
- Achievement Level Descriptor,
- Key/Distractors, and
- Knowledge type and cognitive category (if applicable) and consider the following options:
 - If the content of the item is not accurate or does not match an objective/standard, the item is revised or deleted.
 - If necessary, the specialist should edit the stem and foils of the items for clarity and adherence to established item writing guidelines.
 - If there are necessary revisions outside the technical scope of the specialist (such as artwork, graphs, or edits to reading selections), the item is moved to **Step 3** for edits by Production staff.
 - If the item contains stimulus material, the item is moved to **Step 3** for copyright checks by Copyright staff.

Once the content specialist has spent the needed time on the item and certifies that it is ready to be on a form, the items is sent to **Step 4** (Teacher Content Review).

Step 3: Production Edits/Copyright Checks

Items needing revisions outside the technical scope of the Content Specialist (such as artwork, graphs, and reading selections) are revised by Production. Items with stimulus materials are reviewed by Copyright staff for copyright concerns and proper citation. Once the item is revised by Production or reviewed for copyrights, it is moved to **Step 2** for another review by a Content Specialist.

Step 4: Teacher Content Review

Teacher item reviewers are required to undergo the same training as item writers. At this step, two North Carolina trained item reviewers look for any quality issues or bias/sensitivity issues and suggest improvements, if necessary. One of the teacher reviewers is an exceptional children's teacher, and the other is a general education teacher. The exceptional education teacher pays particular attention to the item's appropriateness for student populations with moderate to severe intellectual disabilities. Both trained reviewers evaluate the item in terms of

- alignment to grade-level content standard;
- content of item: accurate content, there is one and only one correct answer, appropriate and plausible context;
- cognitive category;
- being clearly written;
- motivating and plausible distracters;
- appropriate assigned achievement level descriptor;
- appropriate assigned depth of knowledge
- design conforming to North Carolina item writing guidelines;
- appropriate language for the academic content area and age of students; and
- bias or sensitivity concerns.

Step 5: Reconcile Teacher Content Reviews

A Content Specialist carefully reviews all comments/suggestions from the content reviewers and makes any appropriate revisions. The Content Specialist may choose one of the following options:

- Send the item to **Step 6** (Production) if there are revisions required that are outside the technical scope of the Content Specialist.
- Send the item to **Step 7** (EC/EL/VI) if the item is ready for the next stage of review.
- Send it back to **Step 4** (teacher review) if major revisions are made.
- Delete the item.

Step 6: Production Edits

Items needing revisions outside the technical scope of the Content Specialist (such as artwork, graphs, and reading selections) are revised by Production staff. Once the item is revised by Production staff, it is sent back to **Step 5** for review by a Content Specialist.

Step 7: Exceptional Children (EC), English Learner (EL), and Visually Impaired (VI) Review

The EC/EL/VI Specialist reviews the item for accessibility concerns for students with significant cognitive disabilities along with concerns for EL and VI students, such as accessibility of graphics for students with or without vision and also considers Braille accessibility. This review addresses bias or sensitivity issues such as contexts that might elicit an emotional response and a inhibit

student's ability to respond and contexts that students may be unfamiliar with for cultural or socioeconomic reasons. Review of reading level of the item is considered along with stem and foil quality (stem is a clear and complete question, foils are straightforward, no repetitive words, the grammar of the stem agrees with the foils, idioms do not provide an accessibility issue).

Step 8: Reconcile EC/EL/VI Review

A Content Specialist reviews comments/suggestions from EC/EL/VI Specialist and makes any necessary revisions. The Content Specialist may choose one of the following options:

- Send the item to **Step 9** (Production) if there are revisions required that are outside the technical scope of the Content Specialist.
- Send the item to **Step 10** (Grammar Review) for review.
- Send it back to **Step 4** (teacher review) if major revisions are made.
- Delete the item.

Step 9: Production Edits

Items needing revisions outside the technical scope of the Content Specialist (such as artwork, graphs, and reading selections) are revised by Production staff. Once the item is revised by Production staff, it is sent back to **Step 8** for another review by a Content Specialist.

Step 10: Grammar Review

Professional editors review items for grammar, punctuation, and spelling with the following possible results:

- If the item had previously been sent back to **Step 8** by Editing, the editor should check that the suggested revisions were addressed.
- If the editor suggests revisions to the item, the item will move back to **Step 8** for review by a Content Specialist.
- If the editor approves the item as is, the item proceeds to **Step 11** (Security Check).

Step 11: Security Check

Production staff checks to make sure no duplicate copy of the item exists in previous test forms or released items. If there is a duplicate copy of the item, then the item is returned to **Step 8** and removed from the item pool.

Step 12: Alternate Test Lead Review

The Alternate Test Lead reviews the comment history to ensure all comments have been addressed in terms of assessing students with significant cognitive disabilities. The Alternate Test Lead may choose one of the following options:

- Approve the item and move it to **Step 13** (Content Lead Review).
- Send it back to **Step 8** (Content Specialist Review) if revisions are requested.

Step 13: Content Lead Review and Reconciliation

The Content Lead reviews the item and makes any necessary revisions and also reviews the item comment history to ensure all comments have been addressed. The Content Lead may choose one of the following options:

- Send the item to **Step 14** (Production) if there are revisions required that are outside the technical scope of the Alternate Test Lead.
- Approve the item and move it to **Step 15** (Test Measurement Specialist (TMS) Review).

- Send it back to **Step 2** if major revisions are made to the item.
- Delete the item.

Step 14: Production Edits

Items needing revisions outside the technical scope of the Content Lead (such as artwork, graphs, and reading selections) are revised by Production staff. Once the item is revised by Production staff, it is sent back to **Step 13** for review by the Content Lead.

Step 15: Test Measurement Specialist Final Review

A TMS reviews for overall item quality and alignment. The TMS also checks that quality control measures have been followed by reading the comments from all previous reviews and verifying that the comments have been addressed by the Content Specialists.

The TMS evaluates the item for

- alignment to grade-level content standard;
- verification there is one and only one correct answer;
- appropriate assigned achievement level descriptor;
- appropriate cognitive category;
- bias, sensitivity, or accessibility issues; and
- the overall item quality.

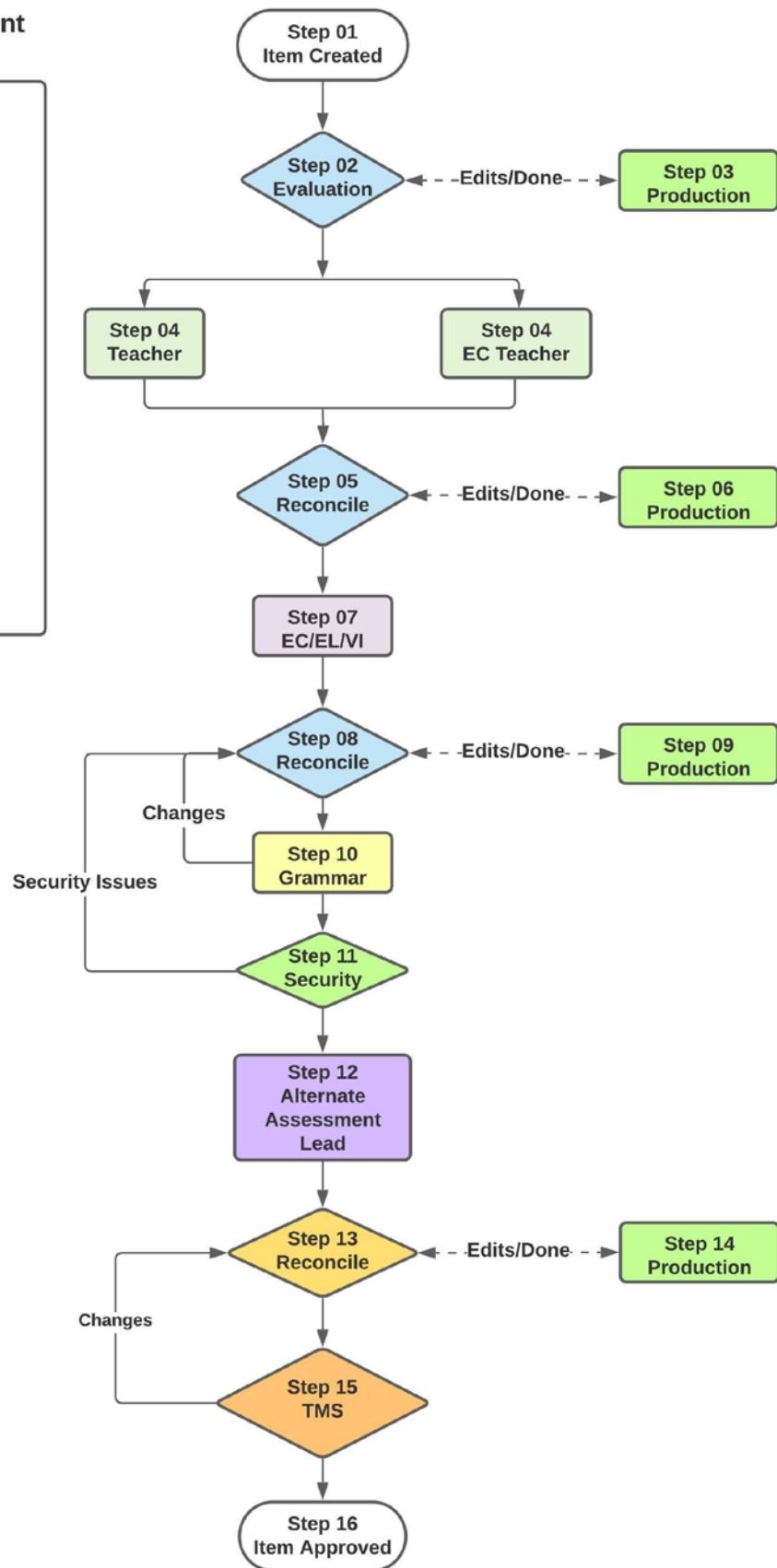
The TMS has these options when submitting the review:

- If the TMS approves the item as is, the item proceeds to **Step 16** (Item Approved).
- If the TMS indicates edits are needed, the item is returned to **Step 13** for review by a Content Specialist.
- The TMS can also choose to **delete** the item.

Step 16: Item Approved

The item is now ready for placement on a form.

Alternate Assessment Item Review



Selection Review Process for the *NCEXTEND1* Alternate Tests

Prior to Step 1, a Reading Content Specialist searches for appropriate selections for each assigned grade using criteria from Test Development staff and the North Carolina Extended Content Standards. The Reading Content Specialist also reviews the selections for any bias and sensitivity concerns. The Content Specialist creates a folder (color-coded by genre) for the selection. A Selection Form Submission slip is completed with the necessary copyright information (specialist's name, date, title, author, source, excerpts, etc., as well as copyright date and ISBN, if applicable) and the selection's readability score, and this is attached to the inside of the folder. Any suggested edits are noted on the selection. On the outside of the folder, a selection routing sheet is attached (includes grade level and title of selection). The Content Specialist also works with Production to create graphics to illustrate content in the selections.

Step 1: Selection Entered

Production staff enters the selection into the test development system. Graphics are inserted into the selection as well.

Step 2: Grammar Check and Copyright Approval & Title/Author Search

The editing staff performs the following:

- reviews selections for grammar, punctuation, and spelling;
- determines if the selection is public domain, gratis, or copyrighted (if copyrighted, determine whether the publisher may be used or if there is a problem, such as excessive expense); and
- searches all selection databases to determine if the selection is already in use.

Step 3: Content Reconcile

Issues noted in Copyright reviews are reconciled by a Content Specialist. The Content Specialist reviews once more to ensure that the selection has

- alignment to grade-level expectations;
- appropriate content, selection length, readability; and
- contains no bias or sensitivity or copyright concerns.

Based on review/reconciliation, the Content Specialist can

- approve the selection as is and move to **Step 5** or
- send the selection to **Step 4 Production** for edits or additions, including artwork. (If any edits or additions are made to the selection including edits to or addition of artwork, the Content Specialist sends a new copy to the Copyright Staff so they can seek permission from the publisher if copyrighted.)

Step 4: Production Edits

Production staff makes edits to artwork. Once revisions are made, the selection is sent back to **Step 3** for another review by a Content Specialist.

Step 5: Alternate Test Lead Review

The Alternate Test Lead evaluates the selection for accessibility concerns for EC, EL, and VI students in terms of

- accessibility for students with significant cognitive disabilities;
- content and length of the selection;
- readability of the selection;
- bias or sensitivity issues, such as contexts that might elicit an emotional response and inhibit students' ability to respond and contexts that students may be unfamiliar with for cultural or socioeconomic reasons;
- accessibility of graphics for students with or without vision;
- appropriateness for Braille;
- prior knowledge required to understand the selection; and
- unfamiliar vocabulary that cannot be understood from the surrounding context.

Any suggested edits are noted on the selection. Based on the review, the Alternate Test Lead can recommend to

- use the selection,
- use the selection with suggested edits, or
- not use the selection.

Step 6: Content Reconcile

Any issues noted in the Alternate Test Lead review are reconciled by a Content Specialist.

NOTE: If any edits or additions are made to the selection (including edits to or addition of artwork), the Content Specialist sends a new copy to the Copyright Staff so they can seek permission from the publisher if copyrighted. Selections needing revision outside the technical scope of the Content Specialist are revised by Production Staff at **Step 7**.

Step 7: Production Edits

Production staff makes edits to artwork. Once revisions are made, the selection is sent back to **Step 6** for another review by a Content Specialist.

Step 8: Test Measurement Specialist Final Review

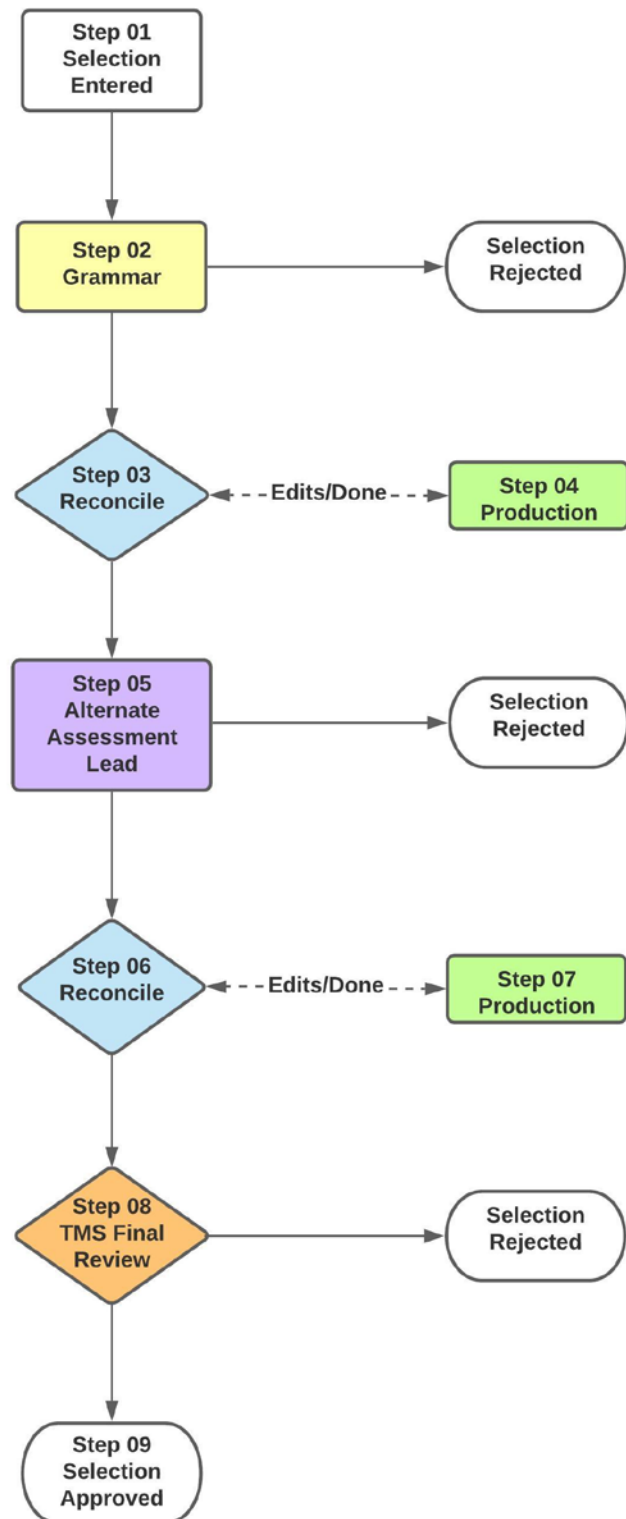
The Test Measurement Specialist (TMS) evaluates the selection for

- alignment to grade-level expectations,
- content and length of the selection,
- readability of the selection, and
- bias or sensitivity concerns.

The TMS also evaluates any bias or sensitivity concerns raised by the Alternate Test Lead review and edits made by Content at **Steps 1 and 3**. If the TMS rejects the selection, it is deleted from the pool. If the TMS approves the selection, then it moves to **Step 9**.

Step 9: Selection Approved Selection is now ready to have items written to it.

Alternate Assessment Selection Review



Form Review Process for the *NCEXTENDI* Alternate Tests

Prior to Step 1: Psychometrician reviews the test items for the initial placement in the form, taking key balance into consideration.

Step 1: Select Item Numbers

A Psychometrician selects/approves the items to populate the form. The Psychometrician can send the form to **Step 2** (Production Edits) for revisions to artwork, graphs, or reading selections, if needed, or sends the form to **Step 3** for content review. If needed, the Psychometrician approves any item replacement or revisions.

Step 2: Production Edits

Revisions to items such as artwork, graphs, and reading selections are made by Production staff. Once the revisions are made, the form is sent back to **Step 1** for review by the Psychometrician.

Step 3: Form Review/Reconciliation

A Content Specialist reviews the items on the form for content alignment and quality of content, and reviews the form for conflicts or repetition of content.

If any items need to be replaced due to concerns regarding conflicts or repetition of content among items, or for quality concerns, the Content Specialist sends the form back to **Step 1** with comments for the Psychometrician. If revisions are needed to items such as artwork, graphs, and reading selections, the form is sent to **Step 4** for production edits. Otherwise, the form is sent to **Step 5**, Test Measurement Specialist (TMS) review.

Step 4: Production Edits

Revisions to items such as artwork, graphs, and reading selections are made by Production staff. Once the revisions are made, the form is sent back to **Step 3**.

Step 5: Test Measurement Specialist Review

This review step is conducted to ensure that the form is ready for Outside Content Key Check (i.e., the form is ready for students) and considers both item- and form-level quality with the following sequence:

- The TMS will submit a review for each item, including any comments. Suggestions for revisions to items should be made only when necessary.
- After reviewing the quality of each item, the form should be evaluated in terms of cueing, repetition, and content coverage.
- The key balance of the form is checked. If the key balance is poor, the TMS will suggest which items' foils to reorder and what the key ought to be. Any suggestions for key balance edits must be approved by the Psychometrician. The form is then returned to **Step 1**.

After reviewing each item, the TMS can add form-level comments and suggested improvements, and can

- send the form back to **Step 1** with suggestions for replacements or revisions,
- move the form to **Step 6** (Reconcile), or
- delete the form from the pool.

Step 6: Reconcile

At this step, the form is ready for Outside Content Key Check. The Content Specialist should review the form comments to ensure any suggested replacements or revisions have been addressed and that any approved replacements or revisions have been made correctly. If any replacements or revisions were made incorrectly, the Content Specialist moves the form back to **Step 1** with comments. If any revisions are needed to artwork, graphs, or reading selections the form is sent to **Step 7** (Production Edits). Otherwise, the form moves to **Step 8** (Outside Content Key Check).

Step 7: Production Edits

Revisions to items such as artwork, graphs, and reading selections are made by Production staff. Once the revisions are made, the form is sent back to **Step 6** for review by a content specialist.

Step 8: Outside Content-Specific Expert Review and Key Check

An Outside Content Specialist reviews the form by answering each item and providing any comments and/or suggestions. (Outside content-specific experts are not involved in creating any item. They are not affiliated with NCDPI or NCSU-TOPS agencies and serve as objective, independent reviewers. These experts must have verified credentials and experience in their subject matter area and be approved by NCDPI as content experts.).

Step 9: Reconcile Outside Content-Specific Expert Review

Content Specialist checks the keyed response from the Outside Content-Specific Expert Review against the key for each item and reviews all comments and/or suggestions from the Outside Content-Specific Expert. Any key disagreements are reconciled, and comments and/or suggestions from the Outside Content-Specific Expert are addressed. Forms needing revision outside the technical scope of the Content Specialist are revised by Production at **Step 10**.

Step 10: Production Edits

Revisions to items such as artwork, graphs, and reading selections are made by Production staff. Once the revisions are made, the form is sent back to **Step 9** for review by a Content Specialist.

Step 11: Psychometric Review/Key Balance

A Psychometrician performs the following:

- reviews comments/suggestions from the Outside Content-Specific Expert and from Editing staff, with consultation with the TMS and Content Specialists;
- checks key agreement with the Outside Content-Specific Expert and resolves any disagreements through consultation with the TMS and Content Specialists;
- makes any approved revisions, or indicates revisions for Production staff to make, and sends the form to **Step 12** (Production Edits); and
- checks the key balance.

Step 12: Production Edits

Revisions to items such as artwork, graphs, and reading selections are made by Production staff. Once the revisions are made, the form is sent back to **Step 11** for review by the Psychometrician.

Step 13: Grammar Review

An editor reviews the form for grammatical and/or formatting issues, providing comments and/or suggestions as needed.

Step 14: Reconcile Grammar Review

A Content Specialist reviews the form and reviews all comments from Editing staff and addresses any suggestions. Forms needing revision outside the technical scope of the Content Specialist are revised by Production at **Step 15**. If no corrections are needed, the form moves to **Step 16** for review by the Alternate Test Lead.

Step 15: Production Edits

Revisions to embedded experimental items such as artwork, graphs, and reading selections are made by Production staff. Once the revisions are made, the form is sent back to **Step 14** for review by a Content Specialist.

Step 16: Alternate Test Lead Review

The Alternate Test Lead reviews the comment history to ensure all comments have been addressed in terms of assessing students with significant cognitive disabilities. The Alternate Test Lead may choose one of the following options:

- Approve the form and move it to **Step 17** (Test Measurement Specialist Final Review).
- Send the form back to **Step 14** (Content Specialist Review) if revisions are requested.

Step 17: Test Measurement Specialist Final Review

The TMS reviews the form, considering the comments from the **Step 16** review to ensure all comments have been addressed properly. The key balance of the form is checked. The TMS makes any needed edits to items. Then the TMS sends the form to **Step 19** (Final Grammar). Forms needing revisions to artwork, graphs, and reading selections are sent to Production at **Step 18**.

Step 18: Production Edits

Revisions to items such as artwork, graphs, and reading selections are made by Production staff. Once the revisions are made, the form is sent back to **Step 17**.

Step 19: Final Grammar Review

An editor reviews the form for grammatical and/or formatting issues, providing comments and/or suggestions as needed.

Step 20: Final Manager Review

A Content Manager reviews comments/suggestions from the Grammar Review and makes any necessary revisions. The Manager checks the form for overall quality and reviews the form comment history to ensure all comments have been addressed. After reviewing the form, the Content Manager may choose one of the following options:

- Approve the form and send it to **Step 22**.
- Send the form to **Step 11** (Psychometrician) if there are suggested revisions to operational items for the Psychometrician to consider.
- Send the form to **Step 21** (Production Edits) for revisions to artwork, graphs, or Reading selections.
- Reject the form.

Step 21: Production Edits

Revisions to items such as artwork, graphs, and reading selections are made by Production staff. Once the revisions are made, the form is sent back to **Step 20**.

Step 22: Export and Step 23: Final Freeze

The form is exported to paper. The form, all items, and any selections are operationally locked to prevent any revisions. This is to ensure that the published versions of the form, items, and selections are preserved electronically.

Step 24: Form Approved

The form is approved for administration.

Last Revised: February 8, 2021

Moving foils require approval.
Routing sheet must be completed.

Alternate Assessment Form Review

